EXPLORING THE EFFECTS OF CONTENT-BASED INSTRUCTION ON SKILL DEVELOPMENT, DOMAIN-SPECIFIC KNOWLEDGE AND METACOGNITION IN THE L2

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ABSTRACT

Şebnem Yalçın, "Exploring the Effects of Content-Based Instruction on Skill Development Domain-Specific Knowledge and Metacognition in the L2"

The study investigates the effects of Content-based instruction on language, content learning, metacognitive awareness in L1 and L2 on first year students who study in a Department of Foreign Language Education at an English-medium university in Turkey.

Although CBI has been investigated extensively across various contexts such as immersion and English as a second language, there is a limited documented literature in English as a foreign language context such as Turkey. Since most of the studies come from immersion and ESL, studies conducted in the EFL context are needed to explore the efficacy of CBI in EFL.

The present study has an experimental research design in which 60 participants were randomly assigned to two groups. The experimental and the control group consisted of thirty participants. The participants attended follow-up sessions conducted for two hours a week in relation to a departmental course designed for improving research and study skills. Experimental group was given a treatment which is based on a syllabus design which integrated language and content for 12 weeks and the control group followed the regular follow-up syllabus. The syllabus designed for the experimental group aimed to provide a deeper treatment of the content. Thus, reading comprehension questions involved analysis and synthesis of information not only within

a given text, but also across multiple texts. On the other hand, the control group followed a syllabus which focused on language.

A set of instruments were used to measure the variables in the research questions. A multiple choice test and two essays of the participants were used to measure content learning, reading component of IELTS and two essays were used to measure language proficiency. In addition to content learning and L2 language proficiency, metacognitive awareness in L1 and L2 were also measured through questionnaires. The results of the statistical analysis revealed that CBI group outperformed the control group in content learning on both measurements but achieved as well as the control group on language proficiency again on both measurements. However, there was no statistical difference between the two groups on metacognitive awareness in L1 and L2.

The results of the present study confirm the previous research which documented that language and content integration can result in better content learning. The participants in the experimental group were significantly better in content learning and were able to compete with the control group on language proficiency. These results indicate that the content learning do not end in failure in language proficiency.

These results are consistent with Krashen's hypothesis that when the focus of instruction is on meaning rather than language, success in L2 learning is achieved and with the argument that the meaningful communication in purposeful social and academic contexts provided by content and language integration is better for language learning.

ÖZET

"Beceri Gelişimi, Alan Bilgisi ve İkinci Dilde Bilişötesilik Üzerindeki Konu Odaklı Öğretimin Etkilerinin Araştırılması"

Bu çalışma konu odaklı öğretim tekniğinin Türkiye'de eğitim dili İngilizce olan bir üniversitenin Yabancı Diller Eğitimi Bölümünde eğitim alan birinci sınıf öğrencilerinin dil, konu öğrenimi ve birinci ve ikinci dilde bilişötesi farkındalıkları üzerindeki etkilerini araştırmaktadır.

Konu bazlı öğretim tekniği ikinci dil olarak İngilizce öğrenilen ülkeler ve dalma gibi farklı ortamlarda oldukça fazla araştırılmıştır ancak Türkiye gibi yabancı dil olarak İngilizce öğrenilen ülkelerde yapılan araştırmalar çok sınırlıdır. Çoğu araştırmalar ikinci dil olarak İngilizce öğrenilen ülkeler ve dalma ortamlarından geldiği için Türkiye gibi İngilizce'nin yabancı dil olarak öğrenildiği ülkelerde bu konuda çalışma yapılmasına ihtiyaç vardır.

Bu çalışma altmış katılımcının iki gruba rastgele atandığı deneysel bir çalışmadır. Deney ve kontrol grubunda otuz katılımcı bulunmaktadır. Katılımcılar haftada iki saat olarak araştırma ve çalışma becerilerini geliştirmek için hazırlanan bir bölüm dersine destek olarak yapılan ek derslere katılmışlardır. Deney grubunda 12 hafta boyunca konu bazlı bir program işlemiştir. Kontrol grubunda ise varolan ek ders programı işlenmiştir. Deney grubu için hazırlanan program içeriğin detaylı olarak işlenmesini hedeflemiştir. Bu yüzden okuma parçalarına ait sorular sadece tek bir okuma parçasının değil tüm okuma parçalarının analiz ve sentezini gerektirmektedir. Diğer taraftan, kontrol grubunun programı ise dil becerilerine odaklanmıştır.

Araştırma sorularındaki değişkenleri araştırmak için çeşitli ölçekler kullanılmıştır. İçerik bilgisini ölçmek için 15 soruluk çoktan seçmeli bir test ve öğrencilerin iki deneme yazıları, okuma becerisi ölçmek için IELTS sınavının okuma bölümü ve öğrencilerin ik denemeleri kullanılmıştır. İçerik bilgisi ve ikinci dil becerilerinin yanı sıra birinci dil ve ikinci dilde bilişötesi farkındalık anket yoluyla ölçülmüştür.

Çalışmanın istatistik analiz sonuçları deney grubunun konu bilgisinin iki ölçütünde de kontrol grubundan daha başarılı olduğunu göstermektedir. Bunun yanında, deney grubu dil becerileri bakımından iki ölçütte de kontrol grubuyla eşit derecede başarılı olmuştur. Fakat, iki grup arasında birinci dil ve ikinci dilde bilişötesi farkındalık ölçütünde istatistiksel bir fark görülmemiştir.

Çalışmanın sonuçları, konu ve dil öğretiminin birleştirilmesinin daha iyi içerik öğrenimi sağladığını belirten geçmiş çalışmaları da teyid etmektedir. Deney grubundaki katılımcılar içerik öğrenimi konusunda kontrol grubundan daha iyi oldukları gibi dil becerilerinde de kontrol grubuyla eşit olduklarını göstermiştir. Bu sonuçlar içerik öğreniminin dil becerilerinde geri kalmaya neden olmadığını göstermektedir.

Bu sonuçlar, Krashen'ın dil öğretiminde odağın dilden çok anlam olması durumunda ikinci dil öğreniminde başarı sağlanacağını belirttiği hipotezi ve içerik ve dil öğretiminin entegre edilmesinin sağladığı sosyal ve akademik ortamlardaki anlamlı ve amaçlı iletişimin dil öğreniminde daha iyi sonuçlar verdiği fikri ile örtüşmektedir.

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Finally, I would like to dedicate this thesis to my parents and to my grandfather, İsmail Yalçın, who, I am sure would have been very proud to see me a graduate of M.A from Boğaziçi University.

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CHAPTER 1

INTRODUCTION

Content-Based Instruction

Content-based language instruction (CBI), which integrates language learning with subject matter learning, is considered one of the most important instructional designs that conform to Communicative Language Teaching (CLT) principles. CBI has been offered as an alternative to bottom-up approaches of linguistically driven curricula and aims to end the unnatural disassociation between language and content since all language inherently includes content (Wesche & Shekan, 2002). CBI is based on a curriculum which is derived from the subject matter rather than forms, functions, situations, or skills. Thus, communicative competence is attained during the process of learning about academic subject matter (Stryker & Leaver, 1997).

CBI takes language as a tool to communicate. Thus, language becomes a means to communicate rather than in the conventional (henceforth 'conventional' will be use to refer to language teaching methods or programs which take language learning as the only aim of teaching) models, which see language as an end. CBI assumes that students can take "two for one". That is, content and language can be mastered simultaneously rather than sequentially. In successful CBI programs, learners master both language and content through a reciprocal process as they understand and convey varied concepts through their second language (Wesche & Shekan, 2002).

CBI shares many principles with CLT that is why it is considered an approach conforming to CLT. For instance, CBI uses interaction activities where learners exchange information and solves problems. It utilizes authentic texts and materials in real-world contexts and takes learners into the center of instruction.

In addition to common principles with CLT, CBI has its own methodological principles. First, all CBI programs share the principle that language and content are taught concurrently. Therefore, learners have the chance to improve their content knowledge and language proficiency at the same time. Learners need to master subject matter texts and concepts through a constant use of their second language (L2). Every content lesson is also a language lesson in a CBI program. Thus, a language lesson is also an opportunity for students to develop concept attainment. Snow, Met and Genesee (1989) proposed a conceptual framework to describe two different kinds of language objectives that are needed in integrated language classrooms. They identify two kinds of language objectives for a variety of language settings where language and content are integrated. The first type of language objectives is *content obligatory,* which refers to language which is closely associated with the specific content objectives and the students cannot master the content without learning the language as well. Content-compatible language objectives can be easily taught through a content lesson, but the material can be taught and learnt without knowledge of this vocabulary, grammar, or language functions. Content-based teachers need to work precisely on the language of the academics needed for success mastery. Working collaboratively with grade level teachers, language teachers identify the content-obligatory language need for successful content mastery.

Second, CBI programs emphasize that learners are placed in an academic context where they need to socialize within a new culture or "discourse community" (Kramsch, 1993, cited in Wesche & Shekan, 2002). This new culture may require new school roles and routines like in early immersion starting from kindergarten, or requirements for academic life and specialized discipline for post secondary students. These new requirements may include essential skills needed for academic success such as academic reading and writing or lab reports or summaries for any subject matter.

Third, expository texts and discourse are central in the content-based language curriculum. Thus, authentic texts which represent native language (L1) norms of usage since they are prepared for native speakers for non-teaching purposes are used in class. Through the use of authentic materials learners are exposed to content knowledge and new language forms at the same time (Wesche and Shekan, 2002).

Finally, focusing on academic language proficiency is probably the most distinguished feature of CBI because the language skills emphasized are primarily those needed for success in academic life. Cummins (1980) proposed that there are two different language proficiencies that a learner can attain. Basic Interpersonal Communication Skills (BICS) can be attained via the help of daily interpersonal communicative activities with the help of contextual and paralinguistic features in a relatively short time. On the other hand, Cognitive Academic Language Proficiency (CALP) takes much longer to attain because it refers to context-reduced, formal features of language which do not include contextual cues. Thus, CALP is the kind of language ability that students need to attain to succeed in academic contexts. Although CALP and BICS are defined as two different proficiencies, no language task can be defined as

requiring only BICS or CALP. Each language task may include various degrees of both. CBI aims to enable learners succeed in academic contexts where there they need to master formal language features and academic content simultaneously.

Cummins (1980) also differentiates among the cognitive demands of language tasks have important roles in CBI. He proposes that any kind of task can be defined as cognitively demanding or cognitively undemanding. The former refers to language tasks that require higher mental processes like analysis, synthesis and evaluation. On the other hand, cognitively undemanding tasks require lower mental processes like comprehension. The degree of the cognitive demand on the learner is basically dependant on internal factors like the background information (schema knowledge) the learner has about the specific task and the language proficiency and external factors like the complexity of the task itself. When the learner has the required information for the task, s/he does not have to spend much time in figuring out the problem and achieves the task. On the other hand, when the learner has the required background knowledge but lacks the language proficiency, s/he may fail to achieve the task. CBI emphasizes cognitively demanding tasks because they support the development of higher order thinking skills and critical thinking skills.

Cummins proposes that language tasks can be defined as ranging on two intersecting continua (Figure 1). The second dimension of tasks has an important relation with the cognitive demand of language task. These are context-embedded and context-reduced aspects of language proficiency. Context-embeddedness refers to paralinguistic features and contextual clues like gestures and intonation. People make use of the context-embedded aspect of language proficiency when communicating face

to face and share common and mutual efforts, knowledge and experience. Context-reduced aspect is more related to the formal, complex and abstract features of language since context-reduced feature of language proficiency is closely related to cognitive growth because of its abstract nature.

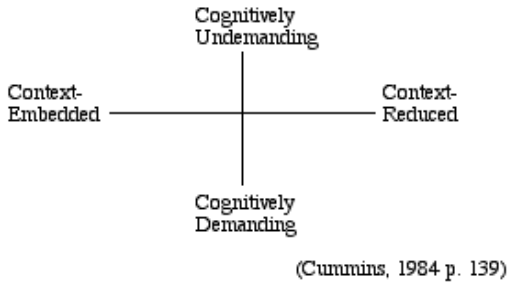


Figure 1 Dimensions of language proficiency

By selecting the right content-based language objectives and activities, the teacher can vary the degree of cognitive demand on the task or by altering the contextual features of the activity s/he can promote higher cognitive functioning.

The literature has documented the advantages of language and content integration at various grades across different contexts. CBI models are reported to enhance language and content learning. Language and content integration also results in increased motivation and interest on the part of the learner.

Content in language learning provides a meaningful context for learning and communication. Language becomes a vehicle for meaningful and developmentally appropriate content (Grabe & Stoller, 1997). Content and language development goes

hand in hand, like cognitive and L1 language development in children. Cognitively and academically appropriate and interesting content in CBI models increases second language acquisition because students learn language better when there is an emphasis on meaningful content rather than the language itself (Met, 1991).

When content is integrated into language learning, it provides opportunities for using skills beyond mere description and identification. Since the tasks get cognitively more demanding and context embedded, students are encouraged to develop higher order thinking skills (Met, 1991). Content also provides opportunity for learners to make use of their background knowledge and bring expertise to the class. Activating prior knowledge also leads to better learning (Grabe & Stoller, 1997).

Coherent and meaningful information presented according to the students' grade level leads to better learning. This learning is supported by a great number of connections between each piece of information. Anderson' Cognitive Theory (1990) suggests that greater connections related to information learned promotes better learning and better recall.

Most research conducted in the field comes from immersion studies carried out in Canada and the United States and studies conducted in the ESL context at the university level. The CBI studies reported are generally descriptive, which means they only report the features of the programs. There are recent studies conducted in EFL context but these studies are also mostly descriptive rather than investigating the effectiveness of CBI. CBI has been supported by many theories such as Depth-of-Processing and Cognitive Learning Theory (Anderson, 1990), The Social Constructivist Theory of teaching (Vygostksy, 1978), and research conducted on extensive reading,

strategy training and so forth. However, these theories of extensive reading and strategy training have not been investigated in experimental studies of CBI. Most of the documented literature on CBI investigates the effect of CBI on language proficiency and content learning. Studies which assess content learning are rare since there are not many available standardized tests for content learning. Furthermore, the possible effects of CBI on individual differences like metacognitive awareness have not been studied yet.

CHAPTER 2

LITERATURE REVIEW

Content-Based Language Instruction

Over the last few decades there has been a movement in language teaching away from studying about language toward a focus on using a language as a tool to communicate (Stryker & Leaver, 1997). CBI, which is defined as "integration of particular content with language teaching aims" and rejects the notion that language should be the only aim of a language class per se, has been one of the most popular language teaching methods among all in the last fifteen years. Moreover, CBI is seen as a powerful innovation in language teaching across a wide range of instructional contexts and it is viewed as a growing enterprise (Grabe & Stoller, 1997; Brinton, Snow & Wesche, 1989).

CBI is based on the principle that people learn languages by using them in real life rather than learning a language first and using it later on (Brinton et al., 1989; Cantoni-Harvey, 1987; Crandall, 1987). CBI tries to provide meaningful learning by a curriculum based on learners' needs and interests. The course objectives, materials, activities, and tasks are designed to correspond to cognitive and affective needs are chosen appropriate to the learners' proficiency levels (Leaver & Stryker, 1989). Language is used as a medium for meaningful communication in authentic interactions and classroom activities have a purpose and require an authentic exchange of meaning (Met, 1998).

CBI can be viewed as a philosophical orientation, a methodological system, a syllabus design for a single course, or a framework for an entire program of instruction at the same time (Stryker & Leaver, 1997). It requires total integration of language learning and content learning. Thus, CBI represents a significant departure from conventional foreign language teaching methods since it shifts the focus of instruction from the learning of language per se to the learning of language through the study of subject matter (Styker & Leaver, 1997).

CBI has put forward strong arguments for language teaching practice. However, it also has strong evidence from Second Language research to support those arguments. Grabe and Stoller (1997) provide a detailed overview of research findings to support content-based instruction. Krashen's Comprehensible Input Hypothesis (1985) is one of the basic tenets of CBI. Krashen argues that language is best acquired through extensive exposure to comprehensible input. As natural language acquisition occurs in context, it is never learned apart from meaning. According to Krashen, success in second language could be best achieved when the conditions are made similar to first language acquisition. Cognitive development and language development occur simultaneously in young children. Language is a medium for a child to understand the world. The child explores the world by experiencing with the language. When conventional methods of second/foreign language teaching separate language learning from academic development, they do something contrary to child first language acquisition. CBI aims at integrating content into language learning to practice second/foreign language instruction similar to first language acquisition (Brinton et al., 1989).

Snow, Met, and Genesee (1989) argue that CBI bases language teaching on the premise that language is learned most effectively for meaningful communication in purposeful social and academic contexts. Thus, CBI tries to provide a similar context to real life in second/foreign language teaching.

The History of Content-Based Instruction

Integrating content and language is a growing interest in today's world. However, it is not a new one. Brinton et al. (1989) provide a detailed historical account. St. Augustine, as early as 385 A.D, emphasized the need for a focus on meaningful content in language. The real shift from isolated language teaching started with the Language across Curriculum Movement which was the result of a committee report (Bullock report) by the British Government in 1975. The report alleged that first language instruction in schools should cross over all subject matter domains. This movement has influenced second and foreign language instructional practice. The objectives of first language instruction shifted from " learning to write" and "learning to read" to "writing to learn" and "reading to learn" which required a real cooperation between language and subject matter teacher. This movement helped language learners to refine their functional skills in their native language to more the academic decontextualized skills needed in academic writing and reading. Schools in Britain and North America responded positively to this idea (Brinton et al., 1989). They became the pioneers in this new methodology.

English for Specific Purposes or Language for Specific Purposes (LSP) is another cornerstone in the history of CBI. LSP courses aimed to prepare adults who had already identified second language objectives like learning specific language needed for

air traffic controllers for real-life tasks. According to Widdowson (cited in Crandall, 1990) the learning of English is "auxiliary" to the learning of "content" in ESP. The goal of instruction was to enable learners to access texts, seminars or understand the language of specific disciplines such as science, technology, and economics etc better (Crandall, 1990). Homogeneity of the learners was an important requirement for LSP courses. Since they generally served specific occupations or fields, their objectives and tasks differed significantly across fields and levels (Brinton et al., 1989). English for Academic Purposes (EAP), which aimed at preparing students for study abroad, constituted a major part of LSP courses. Some second language needs are difficult to teach through subject matter due to their isolated nature. According to Brinton et al. (1989: 7) "LSP courses through the frequent use of authentic materials and attention to the real life purposes of the learners, often follow a methodology similar to that of other content-based models in which a major component is experiential language learning in context."

The immersion model, which is still popular in some parts of the world like Canada and the United States, is the most carefully researched example of content-based instruction at elementary and secondary levels. It was consistently reported to be effective from kindergartners to adolescents with a type of instruction that focuses on teaching subject matter through the medium of second language (Brinton et al., 1989). Although there have been unsuccessful cases with language minority children, the immersion model yielded consistent results in both Canada and the United States with language majority children (Genesee, 1987). Brinton et al. (1989) indicated that immersion resulted in high levels of functional ability in the second language with near-

native proficiency in receptive skills both in elementary and late immersion high school program.

Crandall (1990) reports that adult vocational ESL (VESL) is another step in the history in CBI. Tasks determined by specific work needs became the focus of instruction in VESL contexts.

CBI and Some Program Models

Content-based instruction has a relatively short history compared to other methodologies. However, it has been applied in various contexts since it started with the Language across Curriculum Movement. There is a range of contexts and levels in which it is used. Foreign language teachers have implemented content-based instruction in a variety of programs across levels.

Since content-based instruction is mostly used as an umbrella term for a general pedagogical approach that includes a number of methods of teaching and learning non-language subjects through a second or foreign language, there are various definitions of it. In general, CBI can be defined as "a method which ESL, foreign language or bilingual teachers use academic texts, tasks, and techniques as a vehicle to develop both language and content objectives and skills". There are various names in the literature such as *content-based instruction, integrated language and content instruction, content-integrated language teaching.*

Sheltered Instruction

In this variation of CBI, content area teachers adapt the language of the texts and tasks they prefer. They use techniques similar to language teaching such as demonstrations, visuals, and graphic organizers to enable diverse learners with mostly limited English proficiency. This variation of content integration into language teaching is often called as *Sheltered subject matter teaching, Sheltered English* or *Language-sensitive content instruction* (Crandall, 1990).

"In sheltered programs, second language learners, who are mostly from a language minority group and have limited English proficiency, are segregated from native speakers to receive content instruction appropriate to their level of proficiency (Crandall, 1990: 231)." These kinds of classes are often provided in schools where there is a large population of language minority students who speak a different language at home and want to pursue their education in the target language (Crandall & Tucker, 1990; Brinton et al., 1989). The sheltered class is generally taught by a content instructor who tailors the teaching according to learners' language needs and abilities. However, it could be taught by a language teacher who has the content knowledge. An important dimension of sheltered programs is that the overall purpose is the content learning rather than the language learning.

Adjunct Model

Another type of CBI is known as the adjunct model. In this model, students follow two linked courses concurrently; a language and a content course. The two courses share the content base and complement each other via mutually coordinated assignments (Brinton

et al., 1989). Therefore students receive instruction from a language and a content teacher separately. The language teacher may focus on the reading, writing or listening skills required for a subject-matter course, whereas the content teacher may focus on concept development. These are also known as “paired courses”. These kinds of courses are usually preferred at the tertiary level (Crandall & Trucker, 1990). These courses are more commonly offered within second language contexts rather than foreign language contexts. The key feature of the adjunct model is the integration of native and nonnative speakers in the content course and only sheltering them in the language course to enable the students to reach the required language proficiency level without missing the authenticity of the academic demands in the content course. In language class, the focus is mostly on basic academic skills: academic writing and reading. The students are encouraged to practice language and integrate and synthesize information from the content classes. All the information they learn from the content classes provides authentic content for students to use for discussions and writings (Snow & Brinton, 1988).

Theme-based Language Instruction

Theme-based language instruction is another way of integrating content into language instruction. The language teacher selects a theme from which language outcomes are to be realized (Met, 1999). This way language class is structured around topics or themes. The main principle is that the content material presented by the language teacher provides the basis for language analysis and practice (Brinton et al., 1989). Thus, they are chosen to be suitable for students’ academic and cognitive interests and needs, content resources, educational aims. Topics or themes are taken as a source for a wide

range of language items or activities which are truly meaningful and contextualized. Language teachers mostly need to generate activities from various sources and adapt from outside sources.

There are two different ways to organize a theme-based course. It might be organized around several unrelated topics like health, the environment, advertising or literature or the curriculum could be organized around one major topic like cinema and could be subdivided into more specialized topics like special effects, actors and actresses etc. In the end, in both cases a sequence of topics are linked together by the assumption of a coherent overall theme.

Stoller and Grabe (1997) emphasize that all content-based instruction is inherently theme-based. Since a language instructor can work autonomously to conduct a theme-based course, theme-based courses are the most common models of CBI. Theme-based courses do not require the language teacher to be a content expert. Theme-based, adjunct and sheltered instruction are three content-based models that are usually applied at the university level.

Brinton et al. (1989: 17-18) list both the common features and differences of these three types of instruction. First, their main principle is that success is best achieved when students are provided with meaningful, contextualized tasks and exercises with the aim of acquiring information. Secondly, these three types of CBI are all dependent on the academic demands placed on students and basically aim to meet those academic needs. The materials are authentic since they are not originally for language teaching purposes and they are needed to be adapted by the language or content teacher. When the instructors help learners with content, it inherently works for language needs.

On the other hand, there are major differences in instruction, tasks and so forth. In theme-based classes the main aim is to improve second or foreign language proficiency whereas in sheltered classes mastering the content is the primary aim. Thus, content learning is thought to be incidental in theme-based classes and just the opposite in sheltered classes. In terms of the responsibilities of the teacher, sheltered courses assume that a content teacher handles both content and language whereas in an adjunct class the responsibility is shared by the content and language teacher. On the contrary, a language teacher is responsible for both content and language in a theme-based class. Thus, students in sheltered classes earn credit for content and are assessed on content whereas students in theme-based classes are evaluated on language skills. In adjunct courses, they receive credits for both language and content.

Immersion Programs

Genesee (1987: 1) defines immersion as "a form of bilingual education in which students who speak the language of the majority of the population receive part of their instruction through the medium of a second language and part through their first language."

Immersion education emerged as a result of the argument that "intensive exposure to the target language through natural communication with a native speaker is essential for successful second and foreign language acquisition and starting at a young age is a plus" (Genesee, 1987:1).

More than twenty years of research has provided evidence for the immersion model and consistent findings were obtained in both Canada and the United States. Immersion education varies with respect to the goals and characteristics of students, and

the amount of instruction in the languages. Genesee (Genesee, 1987:1) indicates that "both the second and first language can be used to teach regular school subjects like mathematics, science, or physical education. However, the same subjects are never taught using both languages concurrently or during the same academic year. Different subjects are taught through the medium of each language. In general at least fifty percent of instruction in an academic year must be in second language for the program to be in second language to be regarded as immersion."

In Canada, immersion programs aimed at improving students' functional competence in both written and spoken aspects of French promoting and maintaining normal levels of English language development, developing students' academic ability and creating appreciation of both French Canadians, English Canadians respectively. Immersion programs are designed to create the same kinds of conditions that are thought to occur during first language acquisition by engaging students in meaningful and interesting communication, thus creating a desire to learn the language (Mcnamara, 1973; Terrell, 1981 cited in Genesee, 1987).

Immersion programs are available in several different forms. Alternative forms of immersion are early, delayed and late immersion based on the grade level and total and partial immersion based on the amount of instruction in the second language. Furthermore, two-way immersion programs in which language-minority and language-majority students are integrated for all or most of the school day and strive to promote bilingualism and biliteracy and heritage language immersion are available to revitalize and develop heritage languages like Ukrainian in Canada.

Although all models of CBI share the basic premise of integrating language teaching and content teaching together, they differ in terms of the degree of integration, in program objectives, and in practice. Met (1999) introduced a continuum for models that have the common feature of engaging learners with content using non-native language. She draws a distinction between content-driven and language-driven approaches. The former is planned to teach content in L2 or foreign language and takes content learning as the primary aim whereas language-driven courses or programs use content to teach L2 or foreign language and the priority is on language learning and content learning is assumed to be incidental.

In this new continuum, Met proposes that immersion is at the extreme end of the content-driven programs because the focus of instruction is on content and students are expected to master the regular school curriculum in L2 even it is new to them (see Fig. 2). At the other extreme end of the curriculum are language-driven programs which have the language as the primary aim and content is taught to facilitate language growth. In such programs content is supposed to enrich the language instruction. A major feature of the language-driven programs is that the objectives of the language curriculum determine how content is integrated into language instruction. Topics and tasks may be chosen from various disciplines and mostly a language teacher can easily handle the content on her/his own. However, s/he may consult colleagues from a content-area. Met (1999) provides examples of how teachers can integrate content into language instruction. She explains that a language teacher can integrate mathematics into language class when teaching "shopping for clothes" having students calculate the

discounts and tax or an elementary teacher can prepare story problems when teaching animals.

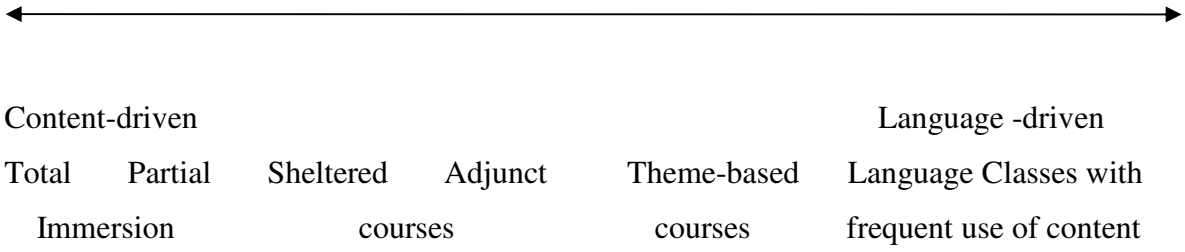


Fig. 2 Continuum for content integration into language teaching (Met, 1999)

Met (1999) indicated that the choice among those alternatives depends upon the content and language objectives of the course and the desired outcomes in both language and content.

The Rationale behind CBI

The most powerful argument for content integration into language teaching is the similarity of the desired context of CBI to language acquisition experience in natural settings. Young children acquire language while they are trying to understand their immediate environment. They have an intrinsic motivation to make sense of the world and communicate with the immediate environment. Thus, the need to be involved in

purposeful, meaningful real life activities is the real motivation for language learning in children (Met, 1991; Snow et al., 1989). By integrating content and language teaching, it is possible to provide meaningful and purposeful social and academic contexts for learners. Language becomes a means to explore the world. This way CBI ends the unnatural disassociation between language and content learning in traditional classrooms and CBI emphasizes the role of content in language learning (Mohan, 1986; Snow et al., 1989). Met (1991:282) argues that "the separation of language from learning, of language from thought, of language from meaning, of language from communication, can only undermine the effectiveness of language instruction." Meaning is an indispensable part of any leaning in human life. The degree of meaning depends on how it corresponds to the needs of the learner. Thus, in order to guarantee that the course objectives, materials, activities, tasks correspond to cognitive and affective needs and chosen appropriate to their proficiency levels (Leaver & Stryker, 1989). When language is used as a medium for meaningful communication in authentic interactions, these communicative classrooms make use of activities and tasks that have a purpose and require an authentic exchange of meaning.

Research in second language acquisition probably provides the major argument for CBI. Krashen (1985) argued that language is best acquired incidentally through extensive exposure to comprehensible second language input. These conditions are present in first language acquisition. The right conditions for successful L2 learning are similar to the ones in L1 acquisition in children. Thus, according to Crandall (1993: 113), "successful L2 acquisition could be achieved when the focus of instruction is on meaning rather than form; when the language input is at or just above the proficiency of

the learner and when there is sufficient opportunity to engage in meaningful use of language in a relatively anxiety-free environment." Realization of these conditions is possible in CBI where academic content works as a meaningful context and modification of the target language both facilitates language acquisition and makes academic content accessible to second language learning (Grabe & Stoller, 1997; Brinton et al, 1989; Crandall,1993). Brinton et al. (1989:3) emphasize that "input which have new elements to be acquired with the help of cues from the situation and verbal context will help a better learning. Learner's imperfect knowledge of language and his/her world knowledge of the language and expectations will interact for a better learning."

Krashen's (1982) parallelism between first and second language acquisition had many implications for the right kind of input in second/foreign language classrooms. He proposed that the input that children get from their caretakers should serve as a model for second language teaching. The right input must be comprehensible to the learner and must be available through multiple opportunities to be understood and used in an anxiety-free environment (Crandall, 1987; 1993). The learner will then try to make meaning out of what s/he already knows and what is meaningful and relevant in the environment.

Ideal conditions that Krashen proposes for second language learning hold another implication for CBI classroom. When language and content are integrated, language is learnt most effectively while communicating in meaningful, purposeful social academic contexts like in real life where the main purpose for talking is to learn what is needed. Language and content integration prevents overlooking the role of each

one in separate instruction which is usually the case in conventional language classes (Mohan, 1986; Cantoni-Harvey, 1987).

Another important theoretical support for CBI is proposed by Cummins (1980), who distinguishes between Cognitive and Academic Language Proficiency (CALP) and Basic Interpersonal Communication Skills (BICS). Basic Interpersonal Communications Skills (BICS) is the social dimension of language that demonstrates a student's ability to converse socially with teachers, peers, and others. According to Cummins, BICS can be attained in a relatively short period of time like two-three years and CALP is the more abstract dimension of language that includes being able to read, write, and perform within a content-area classroom at grade level. CALP takes from 5 to 12 years to develop, depending on a multitude of variables for each ESL student. Although students may seem to develop communicative competence and fluency enabling them to talk with their peers, engage in informal conversation with their teachers, read simple narratives, write informal notes or letters, they may not be able to deal with more abstract, formal, contextually reduced language of texts, lectures, discussions of science or mathematics, or social studies (Crandall, 1987: 6).

In a second language context, students can acquire social language easily in a short time but when they enter mainstream classes, they may experience difficulty in acquiring the academic language required for mathematics word problems, lab reports and so forth (Cummins, 1980). Stoller (1997) indicates that the language of CALP is the language of academic content areas and CBI helps learners develop CALP and BICS simultaneously. Stoller also proposes that students in CBI classes inherently learn content information while they are acquiring CALP. Since these skills are academically-

oriented and require more complex language abilities, they are best taught within a framework that manipulates more complex and authentic content (Crandall, 1987; Cantoni-Harvey, 1987; Short, 1991; Stoller, 1997; Snow et al., 1989).

Cummins (1980) posited another paradigm to characterize language tasks. He proposed that language tasks can be categorized as context-reduced and context-embedded. In context-embedded tasks immediate communicative surroundings help to get the meaning. These include background information, visual or contextual cues available in the environment. In contrast, context-reduced tasks include limited contextual cues for the learner. Making a language task easy or difficult depends on the teacher. The teacher can provide contextual cues and support and make learning more meaningful. In this situation when there are a lot of contextual cues in the environment another dichotomy Cummins proposed comes into play. When the language tasks become too context- embedded, they also become cognitively undemanding in contrast to cognitive demanding tasks such as discussing the causes of the First World War. Met (1991: 283) argues that "CBI classroom activities are cognitively demanding, unlike traditional classroom activities which can be cognitively undemanding. By selecting content-based second/foreign language objectives and activities, teachers can promote higher cognitive functioning while providing quality language practice."

Content integration into language teaching provides both a cognitive and motivational basis for learning (Snow et al., 1989). Content includes some value for the learner to pursue further learning. Thus, it is motivating and worth learning. Language in this situation is only a means to access the content and it may even be incidental to learning about the content like in immersion classes.

Inherent meaning that is included in content provides the cognitive basis for learning since it enables the learners to accommodate learning in the right cognitive and conceptual bases. Language functions and structures work as a means to promote real meaning. If the content chosen is important and motivating for the learners, its motivational and cognitive bases can be realized (Snow et al., 1989). Subjects in the mainstream curriculum can be easily motivating for the learners for language learning at school. This way, students become aware of the fact that the content and language skills are required for their future education. Therefore, the relevance of the materials and classroom activities to the learners' needs is more likely to motivate them and increase their learning efficiency (Genesee, 1994; Snow et al., 1989, Mohan, 1986).

Another argument that supports CBI is that "any teaching should build on the previous experience of the learner by taking previous experience and the existing knowledge of the subject matter into account. Learning becomes meaningful when the learners apply their already existing schemata and skills into new learning situations (Genesee, 1994). CBI courses whether adjunct or theme-based have a sustained content basis which can activate the already existing background knowledge. Learning becomes meaningful when learners add up new schema through subject-matter learning. As they keep expanding their schemata, learning becomes more meaningful and comprehensible facilitating the progress in linguistic, cognitive and academic skills recursively (Flowerdew, 1993; Kasper, 1995). When the new information is presented in a relation to the previous knowledge and experience, it makes both the content and the language more meaningful. Subsequently it lessens the cognitive burden, decreases anxiety, increases motivation and self-esteem (Flowerdew, 1993; Kasper, 1995).

Short (1991: 5) indicates that as proposed by Carrell (1983) schema or background knowledge is built before a topic is introduced. Students are encouraged to process material from both top-down and bottom-up being able to grasp the general picture and study the details like vocabulary, syntax and rhetorical style. CBI enables the learner to grasp the new information with the help of the previous learning. All add up to a more general schema in the end. Theoretical support for CBI comes from Constructivist Theories, which are holistically-oriented and meaning-based, are important for the right decisions in CBI models. The major idea behind holistic approaches is that the brain stores information in networks (Met, 1998: 37). The greater the number of connections and the stronger the connections among networks (bits of information) the deeper and the more powerful the learning becomes. Met (1998) emphasizes that authentic experiences in meaningful contexts promote learning. Holistic approaches enable learners to see how the parts fit into the whole. Students in CBI classes are exposed to a sustained theme which is presented through authentic experiences and they are able to expand their schemata. In a CBI classroom, learners have the opportunity to comprehend how a piece of information is connected to what they have already learnt in others. This way, according to Constructive theory, learning is strengthened because learners are able to perceive the connections among many concepts and facts they are learning.

Another theoretical support comes from Vygotskian concepts in second language learning. According to Grabe &Stoller (1997) the negotiation of meaning that takes place in the CBI classroom is consistent with sociocultural approaches to second language acquisition. Three Vygotskian notions introduced in the sociocultural learning theory: negotiation in the Zone of Proximal Development, private speech, and

appropriation of learning tasks are also important for L2 learning. According to Grabe and Stoller (1997, p: 3) these three notions are applicable to CBI contexts. She suggests that "students in CBI classes have many opportunities to negotiate the knowledge that they are learning and to expand their knowledge to increasing levels of complexity as more content is incorporated into lessons. Moreover, students in content-based classrooms have many occasions to engage in private speech while learning language, sorting out input and rehearsing as they interact with more knowledgeable individuals. Finally, students have many chances to develop ways of learning from teachers, peers, thereby appropriating activities, strategies, and content in ongoing cycles of learning."

CBI is also supported by Depth-of- Processing research (Anderson, 1990), which argues that rather than intention, how the learner processes the material during its presentation matters in learning. According to Depth-of-processing, "any additional information is a kind of elaboration for the information that is committed to memory. Elaborations facilitate recall by providing additional retrieval paths and by permitting recall by inference and reconstruction. Elaborative processing produces better memory for all sorts of material (Anderson, 1990)." Grabe and Stoller (1997) draw parallelism between the principles of Depth-of-Processing and CBI applications in class. They indicate that three principles of Depth-of- Processing research are consistent with CBI: when a piece of information is presented in a coherent and meaningful way, it promotes deeper processing and results in better learning and when a piece of information is elaborated, it can be memorized and recalled better and lastly a spaced study of information, rather than a single massive dose, leads to better memory and recall. When there is a sustained content which learners can base their learning, they constantly add

additional information to the previous ones and they develop personal conceptions about tests, sentences.

The theory of Expertise proposed by Bereiter and Scardamalia (1993) also provides positive evidence for CBI programs. Bereiter and Scardamalia (1993) argue that the extent a learner reinvests his/her knowledge in successively complex problem solving activities and the gains from the increasing challenge can be defined as expertise. Expert-like learners look for complexity in the tasks they engage in and respectively this complex problem solving activity ends in an increase in student motivation. They became aware that their knowledge/expertise in content area and task accomplishment over challenging tasks result in expertise. In the end they look for learning to knowledge building goals rather than task accomplishment goals. According to expertise research, good learners try to figure out connections between sets of information and prefer using different strategies for making the right connections. This theory of expertise has connections with Depth-of- processing research and Anderson's Cognitive Leaning theory because all share a common argument that complexity can optimize learning in the right educational contexts since complex challenges and the investment of skills to meet these challenges stimulate optimal learning.

How CBI involves the principles of Anderson's Cognitive Learning and Depth-of-Processing Theory (1990) is exemplified in a Content-based model called Cognitive Academic Language Learning Approach (CALLA). CALLA is an instructional model designed for limited English proficient (LEP) students who need to participate in mainstream classes and cope with the academic content and language requirements at grade level. CALLA has been influenced by the principles of Cognitive Learning

Theory proposed by Anderson (1990). Anderson's theory proposes a distinction between procedural and declarative knowledge. Declarative knowledge is what we know about a given topic and procedural knowledge is what we know how to do. The former refers to factual information which can be acquired quickly whereas the latter is acquired gradually and requires extensive opportunities for practice. According to Anderson's theory, procedural knowledge underlies the ability to understand and produce language and interplay between declarative and procedural knowledge leads to refinement of language ability (Chamot & O'Malley, 1987).

Skills Emphasized in CBI

CALLA as an instructional model tries to put Anderson's principles of Cognitive Learning theory into practice. Chamot and O'Malley (1987) propose CALLA as an instructional model which aims to provide additional experiences for English Language development in three specific areas: science, mathematics, and social studies for learners at the intermediate and advanced levels of English proficiency. CALLA is not intended to replace mainstream instruction. It rather aims to promote academic language skills which are reported by many researchers to fall far behind the development of communicative language skills (Cummins 1984; Saville-Troike, 1984 cited in Chamot & O'Malley, 1987).

The model has three components: (a) a curriculum correlated with mainstream content areas, (b) English language development integrated with content subjects, and (c) instruction in the use of learning strategies. The content component of the model includes the concepts, facts, and required skills for science, mathematics, and the social

studies at the grade level. Thus, content knowledge is declarative. The language development component intended is to teach the procedural knowledge that will enable learners to use language as tool for learning and provides opportunities for practice using language in academic contexts. In the final step, language comprehension and production is planned to be automatic and learners are anticipated to develop the ability to communicate in academic concepts. The third component is the learning strategies which are based on Anderson's Cognitive Learning theory. Learning strategies play an important role in this model since they are considered to enable learners to develop autonomy in learning. Chamot and O'Malley (1987: 239) argue that "learning strategy instruction is a cognitive approach to learning that facilitates the comprehension, acquisition, and retention of new skills and concepts." They support learning strategy instruction because they argue that good learner are mentally active and they organize new information and consciously relate it to former learning leading to more cognitive linkages. They believe that strategies can be taught and learner would be more successful when provided with enough practice with a variety of learning strategies. Another point they make is that learning strategies are transferable to new learning situations and academic learning is more effective with learning strategies.

Chamot and O'Malley have three categories of learning strategies in their models: (a) metacognitive strategies, which involve planning for learning, monitoring comprehension and production, and evaluating the end result; (b) cognitive strategies, which require the learner to interact with the material to be learned by manipulating it mentally or relating new information to previous learning. The last category is (c) social-affective strategies, which involve the interaction of the learner with another person in

order to assist learning. Chamot and O'Malley select strategies which they thought to be easy to teach and useful for discrete and integrative language tasks.

They emphasize metacognitive learning strategies as particularly powerful because they can be used for many different types of learning activities such as selective attention, self-monitoring, and self-evaluation. They also indicate that most of these cognitive strategies can be used by ESL students to assist learning. Elaboration is thought to be one of the most effective strategies and can be used for all four language skills and all types of content. Elaboration is an important part of Anderson's Cognitive Learning Theory (1990) since it enables learners to add up new connections in the network of learning. When learners elaborate on any kind of information, they call upon previous learning and relate it to what they are currently learning.

CALLA is an approach to learning which supports the language and content integration as well as learning strategy instruction. According to Grabe and Stoller (1997: 4), in addition to CALLA's emphasis on learning strategy instruction, "reading strategy instruction research also has reported that strategy learning works, when it is integrated within the regular curriculum as a consistent feature of content and language instruction." Grabe and Stoller argue that CBI approaches can facilitate development of strategic learners within a language-learning curriculum. Content component of CBI classroom provides a meaningful basis to integrate strategy instruction into the curriculum and recycled on a daily basis.

Grabe and Stoller (1997) list various research areas which have contributed to providing evidence for the arguments of CBI and supported its applications. Reading research also plays an important role for successful applications of CBI because reading

has strong relationships with other variables that can affect the success of any teaching program like motivation, strategy use and so on. Reading comprehension is considered as an essential part of academic learning, professional success and lifelong learning (Tercanlıoğlu, 2004). Although listening, speaking, and writing are also emphasized in CBI, academic reading has a greater importance because the ability to read academic texts is considered one of the most important skills that university students of ESL and EFL need to acquire (Levine, Ferenz, & Reves, 2000). Basic academic reading skills, strategies, and critical literacy skills are three components of successful academic reading. Skilled L1 and L2 readers already have those basic reading skills. Critical literacy which is defined by Palinsar and David (1991 cited in Levine et al., 2000) as "the ability to clarify purpose, make use of relevant background knowledge, focus on major content, critically evaluate content, draw and test inferences and monitor comprehension," is attained as a result of instruction which encourages various strategy use, critical thinking and the use of background knowledge.

Extensive reading is also important for successful CBI because both in L1 and L2 contexts, extensive reading has been shown to improve reading abilities, vocabulary, and general knowledge (West et al., 1993, cited in Grabe & Stoller, 1997;). Elley (1991) emphasizes that extensive reading across a range of topics improve learners language abilities in reading, writing, vocabulary, speaking, and listening skills. Krashen (1989) argues that pleasure reading and free voluntary reading play important roles in ESL acquisition. Extensive reading, according to Grabe (cited in Carrell & Carson, 1997), besides enabling word-level recognition and large vocabulary knowledge is a key source for building student motivation once students are involved. Extensive reading also has

positive effects on students' general background knowledge. Extensive reading according to Grabe (1991), is essential to develop the ability to "read to learn" and become more strategic readers.

Since CBI programs mostly include extensive reading, metacognitive awareness in reading is an important dimension to be emphasized. To be able to grasp the content material, students need to read both extensively and intensively across different genres and different levels of difficulty. Nuttall (1996:38-39) argues that "intensive and extensive reading are complementary and both are necessary." Thus, students need to be skilled readers to succeed in such programs. The sustained theme provides a solid background for learners to accumulate vocabulary and knowledge of the content and with the help of the knowledge they become selectively attentive readers and intentionally attempt to integrate across the text and look for more interpretation rather than literal meanings (Pressley & Afflerbach 1995: 79-80, cited in Janzen, 2002).

Skilled reading, according to Grabe (1991), "is a complex affair that entails a variety of bottom-up and top-down competencies, from the ability to automatically recognize words to extensive knowledge of vocabulary and syntax." CBI programs which emphasize extensive reading across various sources inherently support skilled reading. As skilled reading results in metacognitive awareness in the learner, metacognitive awareness is also promoted in CBI.

Paris and Winograd (1990, cited in Mokhtari & Reichard, 2002:250) maintain that metacognition can promote academic learning and motivation. It is assumed that when learners become aware of their own thinking as they read, write and solve problems at schools, learning is facilitated.

As reading is an indispensable part of content-based programs, reading motivation in students is also one of the important factors in the success of those programs. Types of motivation can be viewed as reason for reading. Students' goals can be classified as intrinsic and extrinsic. Intrinsic motivation refers to the activities in which pleasure is inherent in the activity (Gottifield, 1985 cited in Gutrie et al., 1996). Curiosity and involvement are good examples of intrinsic motivation. Extrinsic motivation refers to motivation that comes from outside the learner. Compliance and recognition are examples of extrinsic motivation.

Relationships between students' motivation and their use of strategies during learning have been examined by several investigators (Corno & Kanfer, 1993; Covington, 1992; Ford, 1992 cited in Gutrie et al., 1996). Pintrinch and De Groot (1990 cited in Gutrie et al., 1996) concluded in a study of 173 seventh grade students that intrinsic motivation and self-efficacy strongly predicted student' use of strategies. Similarly, Meece et al., (1988) reported that intrinsic motivation predicted students' cognitive strategy use in science classroom

Empirical Evidence for Effects of CBI on Language, Content Learning, Motivation

Positive outcomes of empirical studies conducted to demonstrate the effectiveness of CBI as an instructional model provide strong evidence. These outcomes are mostly mastery of language and content. However, various studies conducted in the field used different methods and investigated different variables. There is a variety of outcomes investigated by studies conducted on CBI. Studies conducted with preschool, primary and middle school children in immersion contexts provide the majority of documented literature on CBI. Studies conducted at the university level mostly come from adjunct

and sheltered courses designed for language minority learners in the ESL context. However, there is a growing interest in CBI studies in EFL context. Researchers have started exploring the effectiveness of CBI in the EFL. Despite new attempts in EFL, strong research evidence for CBI comes from immersion programs in the United States, Canada and later in Europe.

Cummins and Swain (1986) provide a detailed review of research studies conducted on Immersion Education in Canada. Immersion students were tested with standardized tests of mathematics and science to demonstrate academic achievement. The results of the studies conducted with immersion students in early total immersion programs in Ontario consistently showed that immersion students performed as well as English taught comparison groups. Swain and Lapkin (1982) report that immersion students performed as well as, or better than, comparison groups in thirty-five separate administrations.

In early partial and late Immersion programs, immersion students were not always equal to English-taught comparison group in academic achievement. They performed less well in mathematics and science. Cummins and Swain (1986: 39) indicate that "these results were mostly due to the fact that the second language skills of the students could be insufficient to deal with the complexities of the subject-matter taught in French." Studies conducted on immersion programs also investigated second language development. When immersion students in early total Immersion programs were compared to French as a Second Language Programs (FSL), which mostly had 20-40 minutes of daily FSL instruction, each study revealed a significant difference in favor of Immersion students (Barik and Swain, 1975; Edwards and Casserly, 1976 cited in

Cummins and Swain, 1986). When early total Immersion students were compared to native speakers of French, studies focused on receptive and productive skills respectively. In terms of receptive skills, Swain and Lapkin (1982) report that on the standardized tests of French achievement, by the grade five or six in a primary immersion program students performed on the average. However, on some locally-developed comprehension tests, Immersion students performed as well as francophone students as early as second grade. Cummins and Swain (1986) emphasizes that "these studies suggest that early Immersion students develop native-like proficiency in their ability to understand spoken and written French."

Genesee (1987) reports studies conducted on immersion education in Canada. The results of these studies validated the previous results. Early total Immersion students (fourth, fifth, and sixth grades) scored as well as English control students on English mathematics test. In terms of science achievement, Swain (1978) reports that early total immersion students in Ontario scored as well as the English control group.

In terms of French language achievement, Genesee's longitudinal study on early total immersion program in Montreal reveals that Immersion students scored as well as French control group on the comprehension subtest of *California Reading Test* and their comprehension skills during an oral interview were judged to be as good as those of the French control students. Swain and Lapkin (1982) also validated these results. Students in both early and late immersion programs achieved native-like second language proficiency despite some linguistic errors in pronunciation, vocabulary and grammar.

In addition to studies conducted with kindergarten and primary schoolchildren in immersion and ESL contexts, there is empirical support for CBI in the EFL context.

Alptekin, Erçetin, & Bayyurt (2007) report a longitudinal quasiexperimental study which investigated the effectiveness of a theme-based instruction for fourth and fifth grade students. The study lasted two years. The experimental group was exposed to a theme-based syllabus which was designed parallel to topical content of subject areas in science and social studies. The control group, on the other hand, was exposed to a grammatical syllabus designed by the Turkish Ministry of Education that was based on grammatical structures. Both groups had two hours of English per week. The students' language development was measured with the Cambridge Young Learners English Test (YLE) three times (beginning of the first year, beginning of the second year and the end of the treatment) in two years. A comparison of the mean scores on the listening and reading/writing tests showed that experimental group outperformed the control group on three different measurements. The results indicated that young EFL learners who were exposed to a theme-based syllabus designed in relation to national curriculum were able to develop better language proficiency in listening and reading/writing than the control group exposed to a traditional grammatical syllabus. Interviews with randomly selected students revealed positive attitudes of students towards the theme-based syllabus.

When studies conducted at university level are considered there is a widely accepted fact that students from various L1 backgrounds entering university in multicultural, multilingual societies like the United States encounter difficulties in meeting the academic demands of the mainstream classes because those incoming students, both from language majority and minority lack the essential skills to succeed academically. The skills they need include reading proficiency, and ability to synthesize information gathered from lectures or texts (Snow & Brinton, 1988).

One of the most up-to-date studies was carried out by Rogers (2006) who conducted an experimental study in a university-level Italian geography CBI course to demonstrate the improvement in content knowledge and linguistic form/language. The participants were 43 adult beginning level L2 learners of Italian at a university in the United States. The focus of the course was the physical and social geography of Italy and its regions. The students studied an authentic geography book used by middle school students and a workbook specifically designed to accompany the textbook by the university's Italian language director. Classroom activities included class discussions and tasks about the course content. Students did not receive any formal grammar instruction in class or online. However, linguistic forms and functions were not neglected. They were dealt with when they arose within the context of the classroom.

Three measurements were used to evaluate the improvement in linguistic form and content: a composition, a cloze test and selective oral interviews. Two composition tests were given in week 2 and week 12 and were graded by the researcher for content and grammatical accuracy. A subsample of participants was selected for oral interviews, which were held at the beginning and at the end of the semester. The results indicated that the participants improved their content knowledge. The comparison of the mean scores of week 2 and week 12 for each measurement indicated that the participants produced significantly more ideas than in the first one in the composition tests. Secondly, they also improved in functional linguistic abilities on both composition and cloze test. Oral interviews conducted with a subsample also demonstrated gains in oral production with regard to functional linguistic abilities. The results of the study showed that students in the CBI classroom made gains in both subject-matter content and linguistic

form compared to their first scores on measurements although there was not an emphasis on grammar.

Snow and Brinton (1988) describe a Freshman Summer Program (FSP) at the University of California, Los Angeles (UCLA) where they applied the adjunct model of language instruction. The FSP is a content-based instructional program which was designed to support students who lack the essential academic and linguistic skills to succeed at university. The program lasted seven weeks and the students were enrolled in two linked courses concurrently: a language course and a content course. The two courses shared the content base and completed each other through coordinated assignments. Both native speakers and nonnative speakers attended the content course and ESL students were sheltered in the language course. The ESL course focused on academic reading, study skills, and the treatment of persistent structural errors while the content component aimed at helping students synthesize information from the content-area lectures and readings. Students attended twelve to fourteen hours of language and eight hours of content classes in a week. They received credit for both lessons. The Freshman Summer Program at UCLA is a well- studied example of CBI. Snow and Brinton (1988) report two different studies conducted on the same program. The first one reports a retrospective evaluation of former FSP students. The study aimed to demonstrate the profile of former ESL students who had participated in FSP between 1981 and 1985 and reflect their evaluation of FSP after they had taken regular courses during their graduate study. Seventy-four former FSP students replied to the questionnaire. The students commented on two open-ended questions. The results of the first study revealed that students confirmed the overall usefulness of FSP in helping the

transition into graduate study. The results indicated that FSP helped them to adjust to the university, facilitated self- confidence, and enabled them to learn to get help. These results confirmed that the objectives of the program were fulfilled.

In the second study, Snow and Brinton (1988) conducted a follow-up of ESL students who had participated in the FSP in 1986. This study included a control group of ESL students who had not participated in the FSP. Participants were 12 students from the FSP program and fifteen non-FSP students. Two instruments were used for this study: a structured interview to reveal the academic problems the students experienced and a simulated final exam from a content area to assess the students' academic proficiency. The simulated academic tasks included an audiotaped university lecture, an excerpt from a university textbook, objective questions and short answer questions on lectures and texts, and a short essay which required synthesis of information from both lecture and reading passages. The results of the interviews revealed that students believed that FSP helped them to achieve time management, lecture note-taking, and reading. FSP also enabled them to be "wise" to the "system". In terms of the simulated final exam, the test scores of FSP and non-FSP group on ESLPE were analyzed using a Wilcoxon matched-pairs signed-rank test and the analysis revealed ESL students in FSP had significantly lower placement scores than the non-FSP ESL students, but there were no significant differences in performance between the two groups on the objective or the essay questions of the simulated examination. Although the FSP students scored lower on the language exam (ESLPE), they performed as well as the non-FSP students on essay writing, which included listening, reading comprehension and required higher order thinking skills like synthesis and evaluation. The results of the second study also

provided evidence that the adjunct model is suitable for students who lack the required language and academic skills for university. The students who started FSP as lower in English and academic skills could compete with non-FSP students in tasks that required both language and academic proficiency. Thus, these two studies conducted at UCLA provided evidence for the assumption that adjunct model facilitates student motivation in direct proportion to the degree of relevance of its activities and content and the comparison study also indicated that the FSP students were able to perform as well as their non-FSP peers. However, the researchers emphasize that despite the pedagogical strengths of the adjunct model, its applicability depends on various factors like the availability of content course offerings, and students' perseverance in coping with authentic readings and lectures.

Another content-based second language program investigated extensively was at Bilingual University of Ottowa. The University of Ottowa has opened various sheltered and adjunct courses since 1981. There have been a number of research studies on sheltered and adjunct courses undertaken at the University of Ottowa (Burger, 1989; Edwards et al., 1984; Hauptman et al., 1988). Edwards et al. (1984 cited in Burger and Chrétien, 2001) was reported as the first study which compared students from sheltered courses in their L2 with students who took the same courses in their L1. The results proved that sheltered students achieved equally well on content through their L2. The sheltered students were also reported to gain listening and reading comprehension skills equally well compared to students in advanced courses. Hauptman et al. (1988) also found that subject matter learning in L2 helped students improve receptive skills and enabled better L2 use in "real" situations outside the classroom and concluded that

students in sheltered classes made significantly similar and sometimes even greater gains in second-language proficiency compared to learners in the control group. Burger (1989) investigated the written composition of a full-year sheltered ESL group and supported the idea that receptive and productive language skills are closely related and practice in one can improve the other. Ready and Wesche (1992, cited in Burger and Chrétien, 2001) investigated the new adjunct courses which were adopted instead of the sheltered courses at University of Ottowa. The researchers investigated seven adjunct courses at the University of Ottowa and reported substantial improvements in listening and reading skills in all courses. Additionally, students' self-reports indicated positive changes in self-perceived ability in speaking and writing. All previous research at the University of Ottowa reported improvements in receptive skills. Burger and Chrétien (2001) tried to assess students' oral production by investigating two groups of students who attended French and English language adjunct courses linked to Introductory Psychology courses. The adjunct courses aimed at supporting students' academic learning in second language. Instruction focused on all four skills, but mainly emphasized receptive skills especially in the beginning. The students' oral production was measured with an elicited imitation task which is considered to tap the development of high-level productive skills. The second instrument was a discussion task on a psychology-related topic. The comparison of pre- and post-test results for two academic years on two measures indicated statistically significant improvement in both the elicited imitation and discussion tasks. Thus, the students are said to make measurable oral production gains in both fluency and accuracy. The results are important because the students were exposed to L2 through the subject matter content and the adjunct language courses, which mostly focus on

students' understanding of content was only allotted half of the time of a regular content course. The students were able to attain significant gains in oral production skills which are claimed to fall behind the receptive skills in CBI programs.

Gaffield-Vile (1996) describes a sheltered content-based course developed for overseas post-secondary students who experience problems in the first year of their undergraduate courses at universities in Britain. The researcher indicated that the standard EAP courses were not enough to prepare non-native students for undergraduate study. The particular sheltered content-based course in this study took sociology as the subject- matter. It met in two 90-minute sessions for content and 60-minute sessions for EAP work each week. The course was designed for post-secondary non-native speaker students who planned to pursue undergraduate degree in Britain. The researcher emphasized that the students had to be at least of intermediate language ability and no prior background information in content area was assumed. Sociology was chosen as the theme because it was interdisciplinary and included concepts and theories from other subject areas like the humanities and economics. The sheltered sociology course was designed to improve students' four language skills by providing appropriate tasks and activities related to sociology. Thus the students would be familiar with the type of tasks they would experience in the first year. The tasks included listening strategies, interruption strategies for listening to lectures, skimming and scanning for reading and practice with rhetorical devices for writing. The researcher emphasized that the particular course proved one of the assumptions of content-based instruction that language can be effectively taught through the medium of subject. The students found

the CBI courses more motivating and they gained critical academic skills through the study of subject matter.

Stryker and Leaver (1997) present eleven case studies of successfully implemented models of CBI. Each chapter is devoted to a CBI program which was actually implemented and evaluated. The writers of each part provide details of each program.

Klee and Tedick (1997) report on a content-based Foreign Language Immersion Program in Spanish for students with intermediate level of proficiency at the University of Minnesota. The aim was to enable undergraduate students to immerse themselves in a foreign language for one academic quarter, studying the culture, literature and history of the region in which the language was spoken. An important feature of this specific program was that the instructors developed assessment instruments for the specific program and piloted those instruments and changed them substantially. The assessment battery included reading, writing, speaking, and listening and grammar development. The instructors collected data through journal writing, interviews and constantly revised the program considering the results of the assessments and students' comments. The researchers reported that the students' language abilities generally improved during one quarter of immersion instruction. That is students' scores on language proficiency assessment improved significantly on the writing section and two subsets of the grammar portion. Students also rated their facility in the target language higher at the end of the quarter. Designing an assessment battery for a specific CBI program is an important feature for this specific program; however, the battery designed focused only

on language skills, since assessing content is one of the major obstacles in content-based programs.

Kasper (1995) describes two different content-based reading courses developed to facilitate student transition to the mainstream. She reports the results of a study of two variations of content-based ESL reading instruction: a single content course and a paired content course. The ESL course is paired to a mainstream introductory psychology course and the students studied texts topics similar to those of the mainstream course. In the single content reading course, students again read texts on various topics, but within one specific mainstream discipline. The reading component of the single and the paired content courses were identical so that students in both classes read texts about psychology. The only difference between the single and paired course was that students in the paired reading course were also attending a mainstream introductory psychology course. The students were representative of a regular ESL student population attending Kingsborough Community College in the United States. The results indicated that students in the single content ESL class had higher pass rates compared with the students in the regular literature-based ESL students. Likewise students in paired content class outperformed the literature-based ESL students on the end-of- semester reading test. The students in the paired content course had improved scores in both reading and mainstream courses. Students in both single and paired content course reported positive feedback for the courses. Another indication of positive attitude towards the paired content course was decreased attrition rates from the mainstream psychology course. The study concluded that the content-based ESL helped students improve reading performance and prepare for the mainstream better.

Literature on content-based instruction documented enhanced motivation, interest, and decreased anxiety besides improving in language skills and content knowledge. However, there is little reported research on the long term effects of CBI.

Kasper (1997) reports a pioneer study which tried to provide evidence for the impact of CBI on academic performance beyond a single semester of content-based instruction. The study compared the subsequent academic performance of 73 ESL students who took content-based (ESL 09) course with 79 ESL students who took non-content-based ESL courses at Kingsborough College. The CBI group read selections from five academic disciplines like language acquisition, computer science, and anthropology. The syllabus included a four-stage instructional sequence which started with prereading for topic introduction; the second step included the factual work of presenting information about concepts and theories; third step includes discussion and analysis; and the last one includes extension activities. In contrast to the experimental group, the non-content-based (ESL 09) class used texts from various topics rather than being grounded in any specific discipline. However, they followed the same four-stage instructional sequence similar to their content-based counterparts. When the two groups were compared in terms of their performances in various assessments, the content-based group scored higher than the control group on each assessment. The study also investigated the subsequent performance of the students on the college assessment examinations of English proficiency administered at the end of the semester both in reading and writing separately. The experimental group was reported to achieve higher overall scores in the English proficiency than the students in the control group in all four semesters. The experimental group also continued to achieve higher scores after they

were mainstreamed after the ESL 09 course. Another difference was observed in the higher graduation rates in the experimental group. These results, although they need to be taken cautiously, are promising since they present preliminary evidence for CBI programs to provide ESL students with the required linguistic and academic tools they need to succeed in the mainstream. The results should be taken cautiously because both groups of students attended mainstream courses after the experiment which means there may be teacher variability, over which the researcher had no control.

Song (2006) reports another study which investigated long term outcomes of CBI on ESL students at Kingsborough Community College. The study compared ESL students who took content-linked ESL courses to ESL students who took non-content-linked courses. The content-linked ESL courses were a part of a developmental English program which aimed to prepare ESL students for mainstream courses. The content-linked courses were designed in relation to general content courses like *Introduction to Psychology.* These courses were documented over a five-year period so that the researcher could investigate long-term outcomes of content-linked courses. Students attended content-linked courses on a voluntary basis since they required a commitment with a course schedule from 9:00 to 5:00. The study provided significant differences between the two groups. Students who attended content-linked courses performed significantly better than the students in non-content-linked courses in the subsequent language courses required for the developmental program.

Janzen (2002) described a reading course which was a part of an Intensive English program at a university in the United States. Different from other studies on CBI, this study emphasized the importance of reading strategy instruction since expanding

academic vocabulary, reading quickly and reading independently are considered to be three critical objectives for English for academic purposes course. The researcher organized the course syllabus around a single topic, "special effects in the movies" which according to her was a theme with which every student had some familiarity. Sustained content was considered important in developing students' reading abilities because profound knowledge of vocabulary and background information would be more available on a single theme (Pally, 1999). She indicated that a successful strategy instruction should include modeling and feedback. She organized the strategic reading course around the most important strategic reading behaviors, designed activities and homework that required strategic reading. However, Janzen only describes the course she designed. She does not provide any evidence for any kind of assessment on any kind of variables.

Rosenjkar (2002) reported a case study which described an adjunct course based on literature. The writer outlines the challenges he faced in designing and applying the program. The writer tried to make the content-based language course recognized as a credit-bearing one and achieved to gain academic recognition after several years of persistence. The writer included qualitative and quantitative evaluations: statistical comparison between the content-based group and the students who did not take such courses and course evaluation questionnaires filled out by the students. The comparison of the mean scores of the two groups was not statistically significant, but the writer indicates that groups were not comparable at the outset. Another interesting case study in this collection is content-based English for academic purposes in a Thai university (Owens, 2002). The course described was a Communication Skills course which was

designed to cater to the language learning needs of first year students. The description of the course included distinguishing features: tasks, activities and so on.

Criticisms against CBI

Despite the theoretical and experimental support for CBI programs and models, they are not without criticism. First, the reassessment of Canadian immersion programs which are the most studied examples of language and content integration, are reported to reveal some limitations. As Cummins and Swain (1986) state even though immersion students seem to acquire native-like receptive skills, their productive skills may continue to remain non-native. Along with such outcomes, Swain indicates that Canadian CBI immersion programs despite their success in teaching subject matter were not as successful in teaching speaking and writing. Considering this limitation in developing productive L2 skills, Swain proposes *The Output Hypothesis* (1993) which argues that student learning requires explicit attention to productive skills like speaking and writing.

Another criticism of CBI comes from the difficulty of finding interesting and motivating content. Carrell and Garson (1997) emphasizes that although interesting content is motivating for learners, it is difficult to find a common ground for all learners.

Face validity poses another problem for CBI courses because the prospective benefit of content learning is not always that convincing in the post-secondary academic, setting given that future content needs of learners are variable. The communicative needs of learners are said to have greater face validity (Carrell & Garson, 1997). They argue that CBI does not provide a principled basis for deciding on course focus in cases where content mastery is either unnecessary or inappropriate. The writers propose that task-based language teaching would be a better match in terms of face validity.

Finally, practical issues constitute a challenge for CBI programs because CBI demands a strong commitment in terms of language and content teacher coordination, curriculum development and teacher development.

Conclusion

There is substantial theoretical and empirical support for CBI in the immersion and ESL contexts. The studies reported on CBI demonstrate the benefits of CBI, such as using subject matter as the content maximizes learners' exposure to the target language and enables them to receive "two for one" by providing increased content knowledge and language proficiency. Despite some reported cases which indicate that in content-based language models productive skills fall behind receptive skills, literature on CBI recorded many successful programs which have achieved to accomplish their objectives. CBI has gained worldwide acceptance as it is now considered as a "strong" form of communicative language teaching. However, there are not many reported studies conducted in EFL contexts such as Turkey. The EFL studies which are reported are mostly case studies which only report the descriptive features of the programs. Literature on CBI lacks experimental studies which try to explore different variables. In addition, experimental studies which investigate the relations among variables are also needed. Despite the support from related research such as reading research the relationship among different individual variables such as reading motivation, metacognitive awareness have not been studied in relation to CBI considering the fact that CBI is assumed to enhance student motivation and metacognitive awareness. This study aims to explore relationships which are thought to have an effect of a CBI program through an experimental design which is not found in most of the studies conducted in the field.

CHAPTER 3

METHODS AND PROCEDURES

This chapter explains the methods and procedures that are used in the present study. It first lists the research questions and provides the operational definitions of the variables that are being investigated. Then, the population and the instruments used in the data collection procedure are described. Finally, detailed information on the procedures that are followed for data collection and data analysis are presented.

Research Questions

The present study investigates the effects of content-based language instruction on several dependent variables. The selected variables that are to be investigated are as follows: 1) content learning, 2) L2 reading proficiency, 3) writing development, 4) L1 and L2 metacognitive awareness. The researcher aims to examine whether content-based language instruction, as an instruction type, has an effect on those selected variables.

The research questions drawn from these issues are stated below:

1. Are there any differences between experimental group and control group in terms of content learning?
2. Are there any differences between experimental and the control group in terms of writing development?
3. Are there any differences between experimental and the control group in terms of L2 reading proficiency?
4. Are there any differences between experimental and the control group in terms of metacognitive awareness in L1 and L2?

Subjects

The subjects of the study were 55 female, 12 male non-native speakers of English enrolled in a second-term freshman course titled FLED 104 "Study and Research Skills" (SRS) offered by the Department of Foreign Language Education (FLED) at Boğaziçi University, where the medium of instruction is English. Although the course was offered for first year students, there were seven students who were repeating it. Thus, there were sixty freshman students and seven students from different years in their undergraduate study.

FLED 104 is one of the four required courses for the first year students that have to be taken in Spring semester. All participants attended the FLED 104 course which was designed to help students improve academic writing and study skills. The FLED 104 is one of the four EAP courses designed to prepare first year students for the

academic demands of the Department of Foreign Language Education at an English-medium university. These EAP courses focus on different skills such as academic writing, academic speaking and listening and so forth. The FLED 104 course was offered in a single section that met for a three-hour class on Mondays with additional follow-up sessions which were used for the purposes of this study in a period of 12 weeks. The follow-up sessions, which consisted of two hours per week, aimed at helping students about content by providing extra materials and activities. All students who were registered in the FLED 104 course were required to attend the follow-up sessions.

The students' English language proficiency was determined by the Boğaziçi University Proficiency Test (BUEPT) scores they had obtained before they had started studying at the department. Boğaziçi University requires freshman students to present proof of their proficiency in English either with a minimum score of 213 on the computer-based TOEFL, with 4.5 in the writing section; a minimum score of 7 on the IELTS; or a minimum grade of C on the institutionally administered BUEPT. Thus, they all can be considered advanced level students. Two (3%) of the participants passed the BUEPT with A, 29 (43.9%) passed with B, while 35 (53.0%) with C.

The Experiment Setup

Selected texts from Hirschberg's (1999) *Reflections on Language* were used in the study. All of the texts focus on issues related to language such as language acquisition, animal communication, the language faculty, speech impairments, culture and so forth. Thus, the texts enabled the students to look at language from various perspectives.

Two types of curriculum based on these texts were prepared for the study. While the experimental group was exposed to a curriculum that focused on deeper understanding of content, the control group was exposed to a curriculum that focused on improving academic English and writing.

Two separate course packs (See Appendices A and B) were prepared for the follow-up sessions including the texts, exercises and assignments for the 12 weeks. The students had an assigned reading text and exercises related to the text for each class. They were supposed to read the assigned texts before the class to be able to answer some questions and discuss some ideas. The instructor of the follow-up sessions (both the experimental and the control group) was the researcher.

The follow-up sessions had their own requirements, namely regular attendance, classroom participation, keeping a reading and learning journal, pop quizzes, a final exam, and assignments. The students were informed that they had to attend the follow-up sessions in order to get 20% of their final grade for the FLED 104 course. They were also informed that they would not get any credit for the follow-up sessions if they missed more than three classes.

Assignments for the follow-up sessions mostly included writing tasks. The students were asked to write summaries, data commentaries, essays and so on.

The instructor also required the students to keep a reading and learning journal. This journal included students' reflections on the readings and the lessons in which they

participated. Although there was no limitation about the length of each entry, the students had to hand in at least eight entries for twelve weeks.

In the experimental group, there were ten reading texts in addition to common readings. The additional readings were about similar topics to the ones read. The purpose was to provide a deeper treatment of the content. The reading comprehension questions involved analysis and synthesis of information not only within a given text, but also across multiple texts. Extensive reading constituted the major part of the syllabus designed for the experimental group. The students were assigned additional readings from various sources and given some discussion questions in relation to the texts. Additional texts were also about language and communication. The students were also encouraged to search more about these topics and read as much as possible.

The activities for the experimental group mostly consisted of jigsaw reading and discussion activities. Pair work and group work were used. Apart from comprehension questions, discussions were based on questions taken from the "connections" part in *Reflections on Language* by Hirschberg (1999). This part provided questions to connect all the readings on the same topic and enabled fruitful discussions in the experimental group. The questions in the "connections" part required the analysis and synthesis of information across the texts. Since the students read related texts across various texts, they accumulated a considerable degree of knowledge on the issues covered such as language learning, communication and so on. Thus, according to preliminary results of the observations of the researcher, they were able to develop a background schema about the subject with the help of the sustained content; they were able to expand their

background knowledge on the subject. The activities required them to relate new learning to the previous one. Extensive reading enabled the students to exchange their ideas about the texts, ask for further explanations, express their own ideas about the arguments in the texts, and evaluate the texts in terms of the writer's credibility, the strength of the arguments and so on. Extensive reading also aimed to help the students develop confidence and the ability to deal with longer academic texts.

The syllabus for the control group was also based on ten reading texts from the book *Reflections on Language* (1999). The students read the same texts, but answered different questions. The researcher prepared different comprehension questions for the control group, rather than the questions provided by the book. These additional activities were "language focus" activities taken from Swales and Feak, (2004) *Academic Writing for Graduate Students*. The language focus activities ranged from academic vocabulary exercises, synonyms, hedging and boosting, and writing a data commentary to writing a summary. The purpose of the language focus activities in the control group was to improve academic writing and academic speaking skills. Comprehension questions required inference within a text. They did not involve synthesis across texts. The activities mostly included discussions about readings, academic vocabulary exercises, peer correction on writings, writing summary, data commentary and so on. The additional readings that were used in the experimental group were not included in the syllabus for the control group. Instead of extensive reading, students in the control group focused on exercises on language skills.

Definitions and Measurement of Variables

Content Mastery

This is a continuous variable which refers to participants' knowledge about the content covered in the lessons. This variable was measured by a 15 multiple-choice item test developed by the researcher.

Content mastery was also measured by two different writing tests which were given on two different dates. The content mastery was assessed by grading the propositions made on content.

Writing Development

This is a continuous variable which refers to participants' ability to write essays appropriate to the context. Writing development was measured by two different essays given on two different dates about two issues on language.

Metacognitive Awareness

Metacognitive awareness is defined as one's ability to monitor and plan his/her reading. It refers to conscious efforts for better reading. This variable is a continuous variable measured by a questionnaire developed by Carrell (1989) to investigate participants' metacognitive conceptualizations or awareness judgments about their silent reading strategies in both foreign and native language.

L2 Reading comprehension

L2 reading comprehension was measured by reading component of IELTS (2000, pp.83-94).

Data collection

Instruments

Multiple instruments were used to measure content, language ability, metacognitive awareness in English and Turkish.

L2 Reading Test

To measure the students' reading ability, the reading component of the IELTS was administered. The test included three reading texts and forty questions. The first reading test was about shopping. Questions 1-13 were about the first reading passage and six of them were *true/false*; three were *multiple choice* and four of them were *fill in the blanks* type of questions. Questions 14-26 were about the second reading text which was about literacy. There were four *multiple choice*, four *true/false*; four *matching* type of questions. Questions 27-32 were about the third reading text which is about science and included six *sentence completion*, eight *classifying sentences* type of questions. The maximum possible score was 40. The internal consistency of the reading part of the IELTS test was reported to be 0.84 (See Appendix C for IELTS).

The Content Mastery Test

In order to measure the students' content mastery of the subject, the researcher prepared 15 multiple-choice questions from ten reading passages which were read by the two

groups (See Appendix D for content mastery test). The questions were revised by two experts in the field and piloted with third year students in the Department of Foreign Language Education Department. After piloting, the items were revised considering the item difficulty index and item discrimination. All the items and the distracters were revised. The maximum possible score for content mastery test was 15. The reliability of the content mastery test is quite low (Cronbach's alpha: 0.32).

Essay Writing

In order to evaluate how the students could use the knowledge they got from the treatment, they were asked to write two essays on given topics related to language. They were given writing prompts related to the reading texts and asked to write in any organizational style they prefer (See Appendices E and F for writing prompts). The first writing test was given as a part of the midterm exam of the main course during the seventh week of the semester and the second writing test was given two weeks later. The maximum possible score was 70 since the content was not included in scoring. Content was measured separately. The essays were blind-rated by two raters using a composition scale (Jacobs et al., 1981). A norming session was conducted using three randomly selected student essays. The interrater reliability for two essays were .78 and .80, respectively.

Those two essays written on language related issues were scored on content by counting the propositions made on content. The sum of the proposition in each composition was calculated as a content score on the writing. The essays were blind-rated by two raters. A norming session was conducted using three randomly selected

student essays. The content mastery in writings had a score of maximum 25. The interrater reliability of the two raters for content mastery were .81 and .86, respectively.

The Metacognitive Questionnaire in English and Turkish

In order to investigate the students' metacognitive conceptualizations about silent reading strategies and "awareness" judgments in both foreign language (English) and the native language (Turkish), a questionnaire developed by Carrell (1989) was used. The questionnaire asked the participants to judge thirty-six statements about silent reading strategies in the languages in question, English and Turkish. (See Appendix A for the English Questionnaire and Appendix B for the Turkish version)

The original questionnaire was in English in Carrell (1989). The questionnaire, which aimed at assessing metacognitive awareness in a foreign language (English), was given in English and the original was used as it was without any changes in the items.

For the questionnaire, which aimed at assessing metacognitive awareness in the native language, (Turkish) the original questionnaire was adapted for Turkish without any change in the number of items. The questionnaire for Turkish was in English, too (See Appendices G and H for questionnaires).

Thirty-six items on both the Metacognitive awareness in Turkish and the Metacognitive Awareness in English questionnaires included (1) six statements about the participants' abilities in reading in that language, (2) five statements about what they do when they do not understand something, (3) seventeen statements about what they

focus on to read more effectively, and (4) eight statements about things which make reading in that language difficult for them.

Both of the questionnaires were in English. Since the participants were studying at the Department of Foreign Language Education, the level of English language proficiency was not a limitation. The participants received both questionnaires in English. Metacognitive awareness in Turkish questionnaire was exactly the same with the English one in terms of the items and number of items. The internal reliability of metacognitive awareness in English questionnaire is sufficient (Cronbach's alpha: 0.624) and internal consistency for metacognitive awareness in Turkish questionnaire is found to be high (Cronbach's alpha: 81).

Demographic Information Survey

A demographic information survey (See Appendix I) was prepared to gather information about the participants. The questionnaire included three sections: general information, linguistic information and parental information.

In the general information part, the participants were asked about name, age, gender, and GPA. In the linguistic information part, the participants were asked about their native language, the language in which they felt they could express themselves most easily, and other languages they could speak. In the parental information part, the participants indicated the highest level of schooling their parents completed and indicated their parents' total monthly income.

Data Collection Procedures

The treatment lasted for 12 weeks. The students attended the follow-up sessions in two different sections for two hours a week. The students were randomly assigned to their sections considering their proficiency grades and required to attend the assigned section. The researcher decided which group/section would get the treatment randomly. In order to prevent "the Hawthorne effect" the students were not informed about the treatment. They were told that they had to attend the follow-up sessions as a requirement for the FLED 104 course and that they would get 20% of their FLED 104 grade from the follow- up sessions.

Designing the two syllabi and preparing the materials started in November lasted four months. The treatment started in February and ended in May 2006. The administration of the metacognitive knowledge awareness questionnaire, content mastery test, course evaluation questionnaire, and L2 reading test took place in the last two weeks of the treatment. Reading journals and essays were collected during the treatment process.

The content mastery test and IELTS were given on the final exam date of the FLED 104 class, on May 30, 2006. The instructions in the test booklet were strictly followed and the students were given sixty minutes to finish the reading test. The students were given the content mastery test with the IELTS and they were again told that it was a part of the final exam. They took the test with the content mastery test as the final exam for the follow-up sessions. They were given thirty minutes for the content

test. Thus, the final exam which included the IELTS and the content mastery test took 90 minutes.

The administration of demographic information questionnaire, metacognitive knowledge questionnaire in English and Turkish took place on May 25, 2006. These three questionnaires were given in four-page long packs.

The students were given forty minutes for each essay. There was no limitation on the organizational style. They were told that they would be graded on their work.

Data Analysis

As mentioned above, various measurements were used to assess the variables identified in the research questions. The instruments included the IELTS reading test, a 15-item multiple choice content mastery test, two essays written by the participants, and a metacognitive awareness questionnaire (Carrell, 1989). A total of five different analyses were conducted to compare two groups in the present study. Therefore, a Bonferoni correction procedure was used to prevent an increased probability of occurrence of a type I error. Thus, the alpha level was set to 0.01, which was calculated by dividing alpha (i.e., .05) by the number of comparisons. Table 1 provides a list of research questions, the instruments used, the analyses conducted and the hypotheses formed for each research question.

Table 1 Summary of the Research Questions and the Corresponding Procedures

Research Questions	Instruments	Data Analysis	Expected Results
Are there any differences between experimental and the control group in terms of content learning?	A 15-item multiple choice test Two essays scored for the number of accurate propositions	An independent Samples t test for on the multiple choice test scores A 2x2 Mixed Design ANOVA on essay scores	It was hypothesized that the experimental group which focused on content in language class, given the content-rich activities, would have better gains in content learning
Are there any differences between the experimental and control group in terms of language development?		A 2x2 Mixed Design ANOVA for writings graded on language	Extensive reading in the CBI group was hypothesized to improve writing performance despite a lack of explicit focus on language.
Are there any differences between the experimental and control group in terms of reading proficiency?	IELTS reading component	Independent samples t test for IELTS	Extensive reading in the CBI group was hypothesized to improve reading proficiency performance despite a lack of explicit focus on language.
Are there any differences between the experimental and control group in terms of metacognitive awareness in L1 and L2?	Metacognitive awareness questionnaire in L1 and L2 (Carrell, 1989)	One-way MANOVA for metacognitive awareness	The experimental group was hypothesized to better in metacognitive awareness in L2 and L1

CHAPTER 4

RESULTS

This chapter reports the results of the quantitative analyses conducted on the data obtained during the treatment period. Quantitative analyses were conducted to investigate four research questions in this study. Participants were randomly assigned to two levels of the independent variable (instruction type), theoretically ensuring equality between the groups before the treatment. Moreover, comparison of the BUEPT total and individual component scores revealed that two groups did not differ in terms of English language proficiency in general. The independent samples t test for language proficiency did not yield a significant difference: $t_{(62.99)} = .277$, $p > .05$.

Effects of CBI on Content Learning

The first research question aimed to investigate whether the experimental group and the control differed significantly in terms of content learning. To tap this effect, both groups were given a fifteen-item multiple choice test that included questions from the texts that both groups read during instruction. As a second measurement of content mastery, the participants were asked to write two different essays on two different dates. Those essays were scored on the number of accurate propositions made about the content. The scores on the multiple choice test and two essays graded constituted the dependent variables for the first research question. Table 2 and Figure 3 show the descriptive statistics for these tests.

Table 2 Descriptive Statistics for Content learning

	First Writing				Second Writing			
Group	M	SD	Min	Max	M	SD	Min.	Max.
Experimental	10.10	4.11	3.00	17.00	11.44	3.87	4.00	17.00
Control	6.96	4.07	2.00	15.00	8.96	3.76	2.00	19.00

As can be seen from the table, the experimental group generated more propositions on both essay 1 and essay 2 while the variability for the groups seem rather similar. In order to determine whether the differences were significantly different, a 2x2 mixed ANOVA with instruction type (CBI vs. EAP) as the between groups variable and time (essay 1 and essay 2) as the within groups variable was conducted. The assumptions of normality, homogeneity of variance and sphrecity were sustained. Since there were 30 participants in each group, that of mixed design the ANOVA, was considered to be robust to violations of these assumptions. Moreover, Levene's test indicated that the equality of variances assumption was sustained. Finally, the sphericity was not a concern since there were only two levels of the within group variable. Table 3 shows the ANOVA summary table.

Table 3 Mixed Design ANOVA Summary Table of Content Learning

Source	df	SS	MS	F	η^2
Between Subjects					
Instruction Type	1	236.134	236.134	10.802*	.157
Error (between)	58	1267.867	21.860		
Within Subjects					
Content Mastery Essays	1	83.890	83.890	8.847*	.132
Content Mastery* Instype	1	3.223	3.223	.340	.006
Error (within)	58	549.943	9.482		

$p < 0.01$

The ANOVA results for content learning indicated a significant main effect of instruction type as well as time (F (1, 58) = .10.802, p <0.01, ŋ2=.157; F (1, 58) = 8.847, p <0.01, ŋ2=. 132).The results suggest that both groups demonstrated a significantly better performance on essay 2 compared to essay 1. Although there were only two weeks difference between the two essays, the treatments were effective in improving content mastery in such a short time. The results also suggest that the experimental group outperformed the control group on both essays. Figure 3 shows the estimated marginal means of content learning.

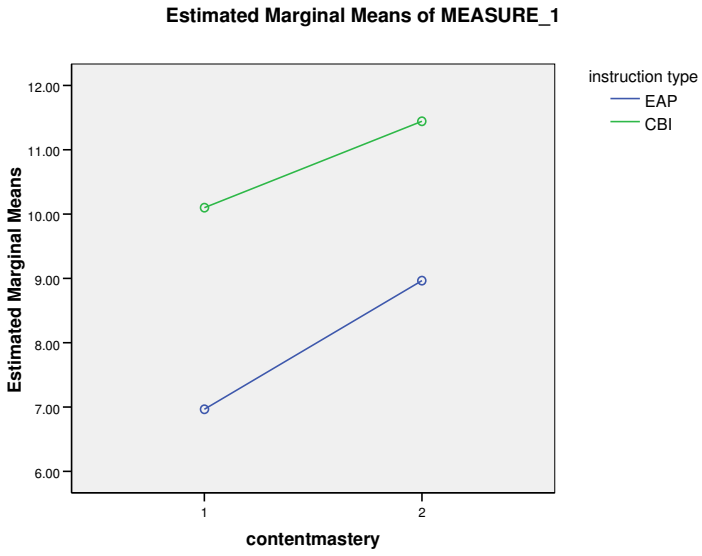


Figure 3 Estimated means table for content mastery

The other measure that was used to compare the content mastery of the groups was the multiple choice test. Table 4 indicates the descriptive statistics for this test. The means on this test was also higher for the CBI group while the variability of the groups were similar. An independent samples t test was conducted to investigate whether the two

groups differed in terms of content mastery multiple-choice test. The results indicated that the mean differences were statistically significant, $t_{(58)} = -2.963$, $p < 0.01$.

Table 4 Descriptive Statistics for the Multiple Choice Test

Group	M	SD	Min.	Max.
Experimental	10.50	1.90	6.00	14.00
Control	9.10	1.74	5.00	12.00

Effects of CBI on Writing Development

The second research question sought to understand whether there was any difference between the two groups in terms of writing development. The essays that were scored for content were also scored in terms of language. Table 5 indicates the descriptive statistics for the languages scores on the essays.

Table 5 Descriptive Statistics for Writing Development

	First Writing				Second Writing			
Group	M	SD	Min.	Max.	M	SD	Min.	Max.
Experimental	55.86	5.69	46.00	70.00	56.18	5.35	48.00	68.00
Control	54.53	6.69	44.00	70.00	55.19	5.13	44.00	68.00

The experimental group had slightly higher means on both essays. A 2x2 mixed design analysis of variance (ANOVA) with instruction type as between group variable and essays as within groups variable was conducted on these scores. The assumptions of the ANOVA were sustained for this analysis, too. Table 6 shows the ANOVA summary table.

Table 6 ANOVA Summary Table of Writing Development

Source	df	SS	MS	F	η^2
Between Subjects					
Instruction Type	1	40.654	40.654	.983	.017
Error (between)	58	2397.992	41.345		
Within subjects					
Writing Development	1	7.271	7.271	.293	.005
Writing Development* Instype	1	.859	.859	.035	.001
Error (within)	58	1437.172	24.779		

$p < 0.01$

As can be seen from the table, neither the interaction nor the main effects were significant. ($F(1, 58) = .983$, $p > 0.01$, $\eta^2 = .017$; $F(1, 58) = .035$, $p > 0.01$, $\eta^2 = .001$; $F(1, 58) = .293$, $p > 0.01$, $\eta^2 = .005$). The results suggest that the groups' writing performance from the first essay to the second were not different from each other.

Effects of CBI on L2 Reading Proficiency

The third research question investigated whether the participants differed in L2 reading proficiency, which was measured by the reading component of the IELTS. An independent samples t-test was conducted to examine the third research question. $t_{(58)} = .165$, $p > .01$ revealed that two even though the control group had a higher mean ($M = 30.03$; $SD = 3.39$) than the experimental group ($M = 28.7$; $SD = 3.93$), the difference was not statistically significant , $t_{(58)} = .165$, $p > .01$.

Effects of CBI on Metacognitive Awareness in L1 and L2

The fourth research question investigated whether the participants differed in their metacognitive awareness in L1 and L2. Since the two dependant variables were significantly correlated (r= .532, p< 0.05), a one-way MANOVA was conducted on the scores from the metacognitive awareness in L1 and L2 tests. Since the sample sizes of the groups were equal and 30, the ANOVA was assumed to be robust against the violations of the assumptions. Moreover, a non-significant Box's test indicated that the homogeneity of variance-covariance assumption was also fulfilled F (3, 605520) = .479, p= .697. Table 7 provides the descriptive statistics for the metacognitive awareness in L1 and L2 scores.

Table 7 Descriptive Statistics for Metacognitive Awareness in L1 and L2

	Metacognitive awareness in L2				Metacognitive awareness in L1			
Group	M	SD	Min.	Max.	M	SD	Min.	Max.
Experimental	123.57	8.17	105.78	149.00	120.80	12.17	85.00	139.00
Control	123.37	7.75	109.00	138.00	122.10	13.29	95.00	162.00

MANOVA results for metacognitive awareness revealed a non-significant result, Wilk's Λ = 995, F (2, 57) = .141, p>0 .01, partial η^2= .005. As Table 8 shows, metacognitive awareness did not differ significantly across the groups on the combined dependent variable.

Table 8 MANOVA Summary of Metacognitive Awareness in L1 and L2 Measured by Metacognitive Awareness in L1 and L2 Questionnaires

Source	SS	Df	MS	F	η^2
Metacognitive Awareness in L1	.25.195	1	25.195	.155	.003
Error	9426.294	58	162.522		
Metacognitive Awareness in L2	.585	1	.585	.009	.000
Error	3681.681	58	63.477		

$p<0.01$

CHAPTER 5

DISCUSSION AND CONCLUSION

The present study explored the effects of language and content integration on content learning, writing development, L2 reading proficiency and metacognitive awareness in the L1 and L2. The study had an experimental design with one experimental and one control group. The participants were randomly assigned the groups and received different treatments for 12 weeks. The instruments involved a fifteen-item multiple choice test, two essays written on a language related issue and graded on content knowledge and language, the IELTS reading component, and a metacognitive awareness questionnaire in L1 and L2. The multiple choice test and essays scored on content-related propositions attempted to measure content learning. Two essays scored on language attempted to measure the writing development. The metacognitive awareness questionnaire developed by Carrell (1989) was used to tap the participants' differences in metacognitive awareness in L1 and L2.

This chapter first discusses the findings of the study reported in the previous chapter then discusses the pedagogical implications. In the final section, the limitations of the present study will be followed by suggestions for further research.

Discussion

As previously discussed, content-based instruction has long been documented as an effective language teaching methodology across various contexts such as immersion and ESL. It has been studied extensively in the immersion and ESL contexts. However, research on CBI is quite limited in the EFL context. Research on CBI has documented the language gains of learners extensively, but there is limited research on learners' development on content. Developing an assessment battery for content learning gains in CBI is an important dimension of CBI research which needs to be improved. Previous research has not studied individual differences among learners such as metacognitive awareness in target language and native language.

The present study with a true experimental design, where the experimental group received an instruction that primarily focused on content teaching while the control group received an instruction that primarily focused on academic writing, aimed to explore the effect of language and content integration on content learning, writing development, metacognitive awareness and L2 reading proficiency with freshmen students at an English-medium university in an EFL context. These variables such as metacognitive awareness and content learning have not been studied in any experimental study. Thus, to the best knowledge of the researcher, the present study is the first true experimental study which aimed at assessing linguistic and content effects of CBI as well as metacognitive awareness.

The results showed that the experimental group outperformed the control group in all three measurements that assessed their content mastery. In terms of writing development, the CBI participants performed as well as the control group. These results

confirmed the hypotheses of the first two research questions. The CBI group was able to improve content learning better than the control group without falling back in the language development. Even though the experimental group did not receive explicit instruction in academic language writing, they were able to compete with the control group on two language-related measurements: two essays scored for language and the IELTS reading test.

These findings confirm the previous research which indicated that language and content integration can result in better content learning and language development (Snow & Brinton, 1988; Edwards et al., 1984; Swain & Lapkin, 1982; Cummins & Swain, 1986; Genesee, 1878; Burger, 1989; Burger & Chrétien, 2001; Roger, 2006).

The results supported the hypothesis that when the focus of instruction is on meaning rather than language like the child L1 acquisition, success in L2 learning is achieved (Krashen, 1985; Crandall, 1990). Language and content integration provides the opportunity for meaningful communication in purposeful social and academic contexts (Snow, Met, & Genesee, 1989). Language learning is strengthened when learners are exposed to purposeful and meaningful samples of the target language while learning a subject matter through the language (Mohan, 1986; Crandall, 1987; Krashen, 1985; Brinton et al., 1989; Met, 1994). The experimental group in the current study was exposed to comprehensible samples of language through subject matter. The subject matter chosen was "language" which is meaningful for students at the department of Foreign Language Education. This subject-matter created a meaningful context and enabled learners build up and expand schemata. Sustained-theme 'language' helped learners activate the already existing background knowledge and they were able to add

up new schema as the learning became more meaningful through activities which related new learning to the previous (Flowerdew, 1993; Kasper, 1995).

Another explanation for better content learning could be made by Depth-of-processing, Anderson's Cognitive Theory and Expertise research which indicate the importance of networks between sets of information and challenge of tasks. Content and language integration, enabled the learners to receive coherent and meaningful information that leads to deeper processing and results in better learning (Anderson, 1990). Discussions on reading texts, cross references from different authentic sources, and challenging questions which required analysis and synthesis stimulated learners and allowed students to experience and develop greater intrinsic motivation and increased learning opportunities. Connection questions that required analysis and synthesis across texts also enabled learners to relate new learning to the previous learning. Thus, they developed greater connections among every piece of information which leads to better learning and recall (Grabe & Stoller, 1997). New material presented in a CBI class can be viewed as elaboration of the previous information due to its connections made through sustained theme. Each new text or task is then related to the previous ones in previous classes.

Better content learning in the CBI group is also compatible with Cummins' (1980) dichotomy of cognitively demanding and cognitively undemanding and context-embedded and context-reduced tasks. The CBI group which focused on content experienced more cognitively demanding tasks compared to the control group. Activities in the CBI group required the learners to utilize higher cognitive functioning such as analysis and synthesis and by the help of concrete examples and background knowledge

these activities are context-embedded. Discussion also required them to integrate former learning into the new one with constant use of background knowledge. Thus, the results of the present study also support the argument that language teachers should move language practice to activities which are context-embedded and cognitively demanding rather than context-reduced and cognitively undemanding tasks (Met, 1991).

The second research question investigated whether the two groups differ significantly in terms of language. Two different statistical analyses conducted on two measurements revealed that the CBI group and the EAP group did not differ significantly in measurements of language even though the EAP group received language-focused instruction. That is, the participants in the CBI group were able to compete with the control group in both measurements of language. These results confirmed that CBI can achieve better content learning along with language development because the students in the CBI group despite not having had formal instruction on language and focusing could compete with the students in the control group who had focused on language during a twelve-week period. The results of the present study are in line with the previous literature conducted (Swain & Lapkin, 1982; Snow & Brinton, 1988). Thus, CBI can be claimed to be an appropriate model for students who need to succeed in academic contexts where they need to attend lectures, take notes, have examinations in second/foreign language. Since the university at which the study conducted is an English medium-university in an EFL context, the results has many implications for optimal learning outcomes in such a context.

The results can also be explained in relation to research on extensive reading. Extensive reading has been reported to lead to improved language abilities and greater

content learning (Krashen, 1985; Grabe & Stoller, 1997). Extensive reading research indicated that a large input of high-interest reading material with related activities specifically designed to process the texts leads to rapid rate of language growth (Eskey, 1991). Extensive reading in the CBI group helped improve language abilities in reading and writing as well.

Finally, the study investigated whether the two groups differed significantly in terms of metacognitive awareness. As the CBI model included extensive reading and activities which are cognitively demanding and analysis and synthesis in all discussions the researcher hypothesized that the students in the CBI group could differ significantly on metacognitive awareness in especially L2. Although the lessons did not include strategy instruction on a daily basis, extensive reading and cognitively demanding tasks are hypothesized to lead to better metacognitive awareness in the CBI group since CBI approaches are thought to be one of the few realistic options for promoting the development of the strategic learners within a language learning curriculum (Grabe & Stoller, 1997). However, the results of the analysis revealed that the two groups did not significantly differ on this variable. To the best knowledge of the researcher, there is no previous experimental study which investigated metacognitive awareness in learners in CBI programs.

Conclusion

The present study, which investigated the effectiveness of CBI at an English-medium university in Turkey, achieved to provide positive evidence for language and content integration. The participants in the CBI group achieved better than the control group in

terms of content-learning. In terms of language, they were also as good as the control group who focused on language during a 12-week period. Thus, content-based instruction can be viewed as a successful language teaching method which both facilitates content and language learning. Metacognitive awareness in L1 and L2 was another research question investigated in the present study. As one of the individual differences that have not been investigated in CBI studies, metacognitive awareness is thought to be an outcome of CBI model. However, the present study revealed that the two groups did not differ significantly in terms of metacognitive awareness.

Implications

The results of the present study indicated that language and content integration provide a meaningful and purposeful leaning context for students. Thus, the results of the study are compatible with the belief that successful second language learning could be achieved when the focus of instruction is on meaning rather than form (Grabe & Stoller, 1997; Brinton et al., 1989; Crandall, 1993). Academic content such as science, history, and literature can work as meaningful contexts for learners. When language is a medium for meaningful communication through authentic interactions, activities have a real purpose and require an authentic exchange of meaning.

The subject matter learning also provides a motivation for learners as they are able to develop schemata about a subject through the course and the learners are able to apply already existing schema into new learning situations.

The results of the present study have many implications for language teaching. First, it requires a strong commitment on the part of the program developers and the language teachers. It also calls for effective collaboration between content and language teachers. Full cooperation is needed because the success of a content-based program may require adjustment on the subject matter curriculum besides the language curriculum. Thus, when content and language teachers work collaboratively, content-obligatory and content-compatible objectives can be decided and the instruction can be planned accordingly. With the help of collaboration both parties get familiar with content and language teaching. Through collaboration, the content teacher can integrate language objectives into subject-matter teaching and the language teacher can integrate content objectives into language teaching respectively. When teachers collaborate, they also share the responsibility for the academic, cognitive and linguistic growth of learners which supports the efficiency of instruction in general (Benesch, 1988; Genesee, 1994).

A local implication can be inferred from the present study. Since the follow-up sessions conducted for the purpose of this study are a part of a departmental course at the Department of Foreign Language Education, the results indicate that language and content- integration in EAP courses can result in better content learning which can lead to students' familiarization with different topics either related to their fields or from different areas of interest. This way these EAP courses, in addition to preparing first year students for better language proficiency, can improve the learners' knowledge about the field they are studying. As content integration into language teaching could be in several ways, the instructors can choose from different models of CBI.

In addition to teacher collaboration, teacher preparation is also needed for successful CBI programs. Content-based language teacher training programs should be included in preservice education programs. Teachers who are qualified in language and content integration could organize teacher cooperation more effectively and design successful CBI programs.

Material development is another element in the success of any CBI program. Although CBI has been used in different programs, adequate materials on which to base such programs have not been developed. Currently, teachers or schools develop their own materials but materials development is complex and demanding. Foreign language teachers need to have adequate course materials which include authentic texts on various themes such as history, government, business, environment and so forth.

Student assessment is one of the major challenges since in an integrated program both academic programs and language should be tested but appropriate instruments are not available. Assessing content mastery is very important in a CBI program but only some informal measures of mathematics are available. Without correct measurements it is impossible to comment on the success of any program. Thus, more studies like the present one should try to include different measurements of the subject matter covered to evaluate how well a student has mastered academic language and content in the target language. Experts in testing and teachers as practitioners should try to develop measurements for both language proficiency and subject-matter learning.

In relation to student assessment, program evaluation is also important for the future success of CBI programs. Since CBI does not have a very long history in terms of long lasting programs which have been documented, the available programs have not

been evaluated to provide both formative and summative information (Crandall & Tucker, 1990). Longitudinal studies which document various aspects of CBI programs are not available. However, in order to be able to evaluate the efficacy of any language teaching method, longitudinal studies are needed. The immersion studies at the Bilingual University of Ottowa and adjunct and sheltered courses in the FSP program at UCLA have been documented extensively (Edwards et al., 1984; Burger & Chrétien, 2001, Snow & Brinton, 1988; Benesch, 1988). There need to be more longitudinal studies, and experimental studies which investigate the efficacy of other CBI programs.

Limitations

Although some interesting and important findings were obtained in the present study, they should be taken as suggestive rather than definitive because of the following limitations.

First of all, this study employed quantitative research methods to investigate the effects of language and content integration on selected variables. However, using qualitative research methods such as interviews and classroom observations, in addition to quantitative instruments could help better understanding of the possible effects in a more detailed and comprehensive way.

In addition, since there was no available scale for assessing content knowledge in essays, the essays were measured based on the number of the accurate propositions in the essays. Previous literature on CBI also indicated a lack of assessing scale for content knowledge.

The multiple choice test which was designed by the experimenter has low reliability. The number of the questions was limited since there were 10 readings that both groups read. Thus, the number of questions in the multiple choice test should be increased to increase the reliability. The multiple choice test was piloted before the study but the test requires more field testing. In order to support this assessment, two essays which were graded on content were included to the study and three measurements were analyzed as one variable called content learning.

Another important limitation for the study is that the students had to attend the follow-up sessions as a requirement of the course which meant additional two hours of classes per week. Thus, some students considered the sessions as a burden and this had an effect on their participation, motivation and so on.

Finally, future research should investigate the processes involved in, and interactions among different individual difference variables, literacy development and subject matter learning. Long terms outcomes of CBI programs need to be investigated extensively in order to evaluate the effectiveness of CBI model.

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APPENDICES

APPENDIX A: SYLLABUS FOR CONTROL GROUP

WEEK 1

Text: *"The Day Language Came into My Life"* by Helen Keller

Reading
Predicting

1) Look at the title of the passage by Helen Keller and discuss with a partner what you might expect to read in the text.
2) Think of ten to fifteen words which you would expect to see in the text.
3) Now read the passage and check whether the words you predicted actually appeared.

Comprehension Questions:

Based on your understanding of the autobiographical passage, answer the following questions:

1. How did Helen feel before she met Anne Sullivan?
2. What was Helen learning when she learned to spell d-o-l-l?
3. Why did Helen break her doll?
4. What did Helen understand when the water flowed over her hand?
5. Why was Helen able to feel sorry about her broken doll?
6. Do you think Helen's personality changed after that day? Support your answer with evidence from the passage.
7. What was Helen's attitude toward the day she describes?
8. What was Helen's attitude toward her teacher, Anne Sullivan?

Assignment

Thinking back to your childhood, try to create a chronological list that identifies significant stages or milestones in your education. Choose one of the stages, write for fifteen minutes, and expand the time period it refers to by describing the events, feelings, and associations that made it such a significant step for you.

Vocabulary

Rewrite each sentence, choosing an appropriate synonym from the following list for the italicized word.

quivered	gushed	dashed	flushed	lingered
immeasurable	dumb	vaguely	groped	tussle

1. The new mother looked with *great* pride at her new baby boy.
   .....
2. The little girl was *unable to talk.*
   .....
3. After he smoked the cigar, we could smell the smoke, which *stayed* in the air.
   .....
4. He *somewhat* understood the letter, but it was not very clear.
   .....
5. The blind woman *felt* her way through the room.
   .....
6. He was *red in the face* after jogging five miles.
   .....
7. In a fit of anger, he *threw* the delicate wine glass against the wall.
   .....
8. Rich black oil *flowed* from the well after the shaft was sunk.
   .....
9. The old car *vibrated* because it needed a tune-up.
   .....
10. The two children *struggled* on the floor, each trying to keep the other down.
    .....

Answer the following questions about the passage

1. What is the *topic* of this passage? What is the controlling idea?
2. Summarize the main idea of the passage in one sentence. Do you find a sentence anywhere in the passage that states the main idea?
3. Explain the comparison Helen gives in the third paragraph. How does it help support the main idea?
4. How is this passage organized?

WEEK 2

Text: *"The Day Language Came into My Life"* by Helen Keller

Speaking

To become aware of the formidable difficulties Keller experienced, think of how you would describe music to someone who is deaf, or colors to someone who is blind. Discuss with your partner and come up with a 2 or 3 minute speech.

Writing

Share you're writing on with a partner and try to evaluate each other's writing on both content and organization. Write suggestions for your friend. Each of you will consider your partner's suggestions and rewrite what you have written.

Assignment

The sentences below have been taken from a text by Noam Chomsky. Read the text through and then decide where each sentence should be inserted in the text.
Check your answers with a partner

a).....if, so then the functional analysis is relevant only on the evolutionary level: human languages must have this rule or one like it, by virtue of a species property…

b)....furthermore, even within the more restricted "languages" there may be considerable diversity...

c)…i have said nothing so far about the questions (1c) and (1e)- namely, the physical realization of the abstract structures of language and their evolutionary history…

d)…the creative use of language is a mystery that eludes our intellectual grasp…

e)…as for the development, language grows in the child through mere exposure to an unorganized linguistic environment, without training or even any particular language-specific care…

Choose a suitable alternative title for the passage and justify your choice

a) Grammar
b) Language and body
c) Humans and apes
d) Language and unconscious knowledge

Comprehension questions

1. Why does the author give the example of a bodily organ in relation to language?
2. What kind of relation is there between the knowledge of arithmetics and language?
3. Why communication can not be taken as the purpose of language according to Chomsky?
4. What are the differences between human languages and the systems that are taught to apes?
5. Why is language infinite?

WEEK 3

Text: "*The Language Faculty"* by Noam Chomsky

Speaking

You have read one of the most influential figures of our century. Do you agree with Chomsky's views on language acquisition? Do you think children have an innate capacity to learn languages?

Evaluating the text

1. After reading the text, how would you describe it? Why?

a) factual
b) critical
c) humorous
d) ironic

2. What would you say was the aim of the author in writing the passage?

Writing

Summarize Chomsky's argument in your own words. What evidence did you find especially compelling that supports his thesis?

Writing an effective summary involves presenting the main points of a passage as concisely as possible.

1) Decide whether the following statements represent the main points in the text.

a) The study of language requires a series of abstractions and idealizations.
b) Language is infinite.
c) The study of the properties of language could be similar to the study of any organ in the body.
d) Human languages and the systems taught to the apes are different.
e) The function of language can not be only communication.
f) Linguists can define language in different ways.

2) Now re-order the main points you choose according to their position in the passage. These statements now form the 'skeleton' of a summary

3) Now re-read the passage and check whether any of the important information has been left out. If it has, rewrite the relevant statement to include it.

WEEK 4

Text: "*The Language Faculty"* by Noam Chomsky

"The Day Language Came into My Life" by Helen Keller

You have read two different texts. Try to compare what you have read in terms of the arguments they try to make and their organizational style. Think of their rhetorical structure and the language they prefer. Try to find specific examples from the texts. Which one can make a stronger argument?

Language Focus
Academic writing style

Academic writing style has some distinctive features. One of the most important features of academic style is using a more formal alternative when selecting a verb, noun, or other part of speech.

Exercise 8 & 12 in chapter 1 *An Approach to Academic Writing* in *Swales and Feak (2004) pp.7-25*

WEEK 5

Text: *"What I learned from Nim Chimsky?"* by Herbert S. Terrace

Reading
Read the text "What I learned from Nim Chimsky" by Herbert S. Terrace and answer the following questions.

1. What bothered Terrace first in the project?
2. What is the first difference that Terrace realized between Nim and children's speech?
3. What was the problem with Nim's longer utterances?
4. Why did Terrace become skeptical about the validity of the semantic analysis they apply to Nim's utterances?
5. How does he categorize Nim's utterances?
6. What was the advantage of using videotapes for data collection?

Extracting main ideas

The folllowing are main ideas for four different paragraphs. Match the sentences with the paragraphs 2, 4, 10, 12.

a) There was an overlap in Nim's two- and three-word utterances.

b) Most of children's utterances are elaborations or novel.
c) Nim's utterances do not increase with the new vocabulary.
d) Nim's utterances were less spontaneous and less original than expected.

Find a suitable heading for the paragraphs 2, 4, 10, 12

Language Focus

Data commentary

In many reading texts, you see that the writer discusses data or there comes a time you need to discuss data. The data may be displayed in a table, graph, figure, or some other kind of nonverbal illustration. The data may come from a source or it may be the outcome of your own work. This data may be incorporated in the main text or in some cases attached as an appendix.
In the text *"What I learned from Nim Chimsky?"* , the writer tries to visualize some points with the help of charts and graphs. Choose one of the graphs and try to summarize the ideas in short paragraph and exchange your data summary with a partner and share your ideas.

Exercise 2& 3 in chapter 4: *Data Commentary* in *Swales and Feak (2004) pp.112-146*

APPENDIX B: SYLLABUS FOR CBI GROUP

WEEK 1

Text: '*The Day Language Came into My Life'* by Helen Keller

READING
Answer the questions about *"The Day Language Came into My life*". Try to support your ideas with the evidence from the text.

Comprehension

1. **1.** Why is it important for the reader to understand Keller's state of mind in the days preceding the events she describes? For example, in paragraph 6 she says, "in the still, dark world in which I lived there was no strong sentiment or tenderness." Why would not being able to name objects (in this case, a doll she has broken) make it impossible for her to feel strong sentiment or tenderness?
2. **2.** Why was it important for Annie Sullivan to make Keller realize that the spelled out "d-o-l-l" refer to both her big rag doll and the new doll? What principle of language is involved here?
3. **3.** How did Keller's breakthrough (in para. 7) bring a sense of order and connection to her limited existence and allow her to enter a world where "mother, father, sister, teacher were named" (para. 9)?
4. **4.** What is the main idea or narrative point of Keller's essay? Explain what conflict her narrative dramatizes?

Assignment

Read "Dyslexia" by Eileen Simpson and think about the discussion questions given. Classroom discussion will be based on the reading and the discussion questions below.

1. In what important ways do children suffering from dyslexia differ from normal children who are just learning to read and write? What is Simpson's purpose in defining dyslexia? What myths concerning dyslexia does Simpson wish to dispel?
2. How does the way eight-year-old child, Anna (para.9) is being treated to explain why her attitude is different from that of Simpson when she was a child?
3. What part did improvisation play for Simpson (as it still does for other dyslexics) when called upon to read aloud? Why is it necessary for dyslexics to pretend they are reading the words (par. 10, 16)?
4. Think of an experience you have had when you looked at a familiar word that appeared totally unfamiliar to you, even if just for a moment. How did this experiment give you insight into the predicament dyslexics have all the time?

WEEK 2

Text: "*Dyslexia*" by Eileen Simpson

Speaking

Discuss the ideas presented in the text "*Dyslexia*" with a partner. Try to visualize the situation the writer describes in the text. What kind of difficulties do dyslexics face?

Assignment 1

If you have ever been temporarily physically incapacitated or have a disability, write an essay that will help your audience understand your plight and the visible and subtle psychological aspects of discrimination that the disabled must endure the day.

Assignment 2

Read the text "*The Language Faculty*" by Noam Chomsky. Think about the discussion questions which will be the focus of the discussion in the following week.

1. How does Chomsky's conception of the "grammar of a language" differ from the linguist's idea of grammar as stated in paragraph 3? What is the difference in the way each is acquired and used?
2. What are the chief reasons Chomsky gives to support his assertion that human beings posses an innate capacity to comprehend and construct grammatical utterances in any culture where they are born?
3. Why, in Chomsky's view, is it unlikely that other species-such as chimpanzees, great apes etc. - possess this innate ability to acquire language? What is Chomsky's attitude toward the experimental research that has supposedly disclosed this innate capacity for language in other species? Do you agree with this analysis? Why or why not?
4. What are some key features, according to Chomsky, of the "language faculty"? How does he use the analogy of the evolution of biological organs and structures to shed light on the evolution of the "language faculty" as a mental organ? Keep in mind he has characterized the "language faculty" as follows: "We may think of universal grammar as, in effect, the genetic program…..that permits the range of possible realizations that are possible human languages."
5. Summarize Chomsky's argument in your own words. What evidence did you find especially compelling that supports his thesis? To what extent does he seek out and acknowledge conflicting viewpoints?
6. Do you believe that the people who are native speakers of their culture's language intuitively know whether a sentence is grammatical or not? How would Chomsky's theory help explain whether this is true?
7. Do you think the examples given about the child speech could be evidence for what Chomsky proposes?

WEEK 3

Text: *"The Language Faculty"* by Noam Chomsky

Speaking

What do you think these examples provide us in terms of children learning their mother tongue? Do you have similar experiences?

child: Want other one spoon, Daddy.

father: You mean, you want the other spoon.

child: Yes, I want other one spoon, please, Daddy.

father: Can you say "the other spoon"?

child: Other . . . one . . . spoon.

father: Say "other".

child: Other.

father: "Spoon".

child: Spoon.

father: "Other spoon".

child: Other . . . spoon. Now give me other one spoon?

Child: Nobody don't like me.

Mother: No, say "nobody likes me".

Child: Nobody don't like me.

(eight repetitions of this dialogue)

Mother: No, now listen carefully; say "nobody likes me".

Child: Oh! Nobody don't LIKES me.

(Lightbown & Spada, 1993)

Discussion

Scan the text "The Language Faculty" for a few minutes and answer the questions given as assignment in week 2.

Writing

Summarize Chomsky's argument in your own words. What evidence did you find especially compelling that supports his thesis? To what extent does he seek out and acknowledge conflicting viewpoints?

Assignment 1

Read the text "Reinventions of Human Language" by Jared Diamond and think about the discussion questions below.

1. How do Derek Bickerton's discoveries about grammar revolution among children of working-class immigrants to Hawaii who had no common language suggest an innate blueprint in the brain for language? Why was it significant that, without instruction, these children were able to expand the pidgin language in systematic, syntactically coherent ways? What explains why these children were able to reinvent the same grammatical features again and again?
2. What features distinguish "pidgin" languages (which contain only verbs, nouns, and adjectives) from creole languages? What takes place when "pidgin" develops into creole?
3. What unsuspected parallel connections did Diamond discover between the way his young son Max learned language and the way creole was developed by children in Hawaii? Why is the significance of word order an important issue in Diamond's comparison?
4. How does language make it possible to understand experiences in a way that would otherwise be inaccessible? What experiences have you had that revealed the importance of language to you in understanding and communicating your thoughts?

Assignment 2

Read the text "*Baby born talking-describes heaven*" by Steven Pinker. Consider the discussion questions given. The class discussion will be based on the questions. While reading, try to relate to what you have been reading in this class.

Questions

1. Why is the ability to identify individual phonemes (para. 3-4) such as an important milestone in the process by which babies learn the sounds of their parents' language?

2. What are the main stages of language development, according to Pinker? What features define each stage? What new abilities do children demonstrate, for example, at the age of eighteen months? What significant language principle becomes evident in each of these stages that represent a new kind of ability that had not existed previously? For example, why babbling beginning around eight months to a year so important?
3. How do the kinds of errors that children make-and more important, those they do not make- support Pinker's view that language is innate? For example, what is the significance of errors in which the child overgeneralizes and says "holded" instead of held or "goed" instead of went ?
4. How would you characterize Pinker's tone in this article and his attitude toward his readers? Who would you think the audience is for this essay and what does Pinker want them to appreciate about the subject? Locate the evidence to support your answer.
5. What are the main stages in the baby's acquisition of language? What happens at each stage? What words and phrases does Pinker use to indicate that he is moving from each stage to the next? Does he provide sufficient detail for you to understand this process?
6. Have you ever had the occasion to observe the language-acquiring behavior of babies or children over some period of time? To what extent do your own observations support or refute Pinker's analysis?

WEEK 4

Text: *"Reinventions of human Language"* Jared Diamond *& "Baby born talking-describes heaven"* by Steven Pinker

Speaking

Discuss the ideas presented in "Reinventions of human Language" & "Baby born talking- describes heaven". Try to relate the ideas to what you have been reading in the class.

Connections:

1. To what extent do Keller's experiences suggest that in learning language she is making use of an innate capacity of the kind described by Noam Chomsky?
2. In what important respects does the way a dyslexie child perceives words differ from the normal difficulties children encounter in learning words, as described by Steven Pinker?
3. How does Pinker's analysis of the stages in children's acquisition of language illustrate the means by which innate language processes unfold (as suggested by Noam Chomsky)
4. To what extent is the difference between human and animal languages as described by Diamond similar to the distinction drawn by Noam Chomsky?

Assignment

Read the text "What I learned from Nim Chimsky" by Herbert S. Terrace. Consider the discussion questions given. The class discussion will be based on the questions. While reading, try to relate to what you have been reading in this class.

1. Why are the average length of Nim's utterances and his ability to combine different signs within utterances important criteria that Terrace used in evaluating Nim's linguistic capabilities?
2. Why is the concept of a "spontaneous utterance" such an important one in determining whether Nim possessed a capacity for language?
3. Why, in Terrace view, is he now compelled to disbelieve in an innate linguistic capability in chimpanzees (although he originally set this experiment up to refute Noam Chomsky's theory)?
4. How did the examples of the "mean length of Nim's utterances," when broken down into two-, three-, four-sign combinations, support Terrace's conclusions about the ways Nim's use of language differs from that of a child? Is the evidence given sufficient to warrant the conclusions that Terrace reaches

WEEK 5

Text: *"What I learned from Nim Chimsky"* by Herbert S. Terrace

Speaking

Discuss the ideas the writer presents in "*What I learned from Nim Chimsky"* and evaluate the text in terms of the arguments the writer makes.

Discussion

Can you relate the writer's ideas to Chomsky's view on language acquisition? Does the writer support Chomsky's view on language? Try to give specific examples from both of the texts you have read. Share you ideas with a partner.

Assignment

Read the text "Conversation with a gorilla" by Francine Patterson and think about the questions given below so as to be able to discuss in the class.

1. What criteria does Patterson apply as a standard by which to measure the existence of a capacity for language in Koko? Is it simply Koko's proficiency in mastering a repertoire of signs that has convinced Patterson that Koko is really communicating with her? Why, for example, would a phenomenon like Koko's capacity to insult, deceive, lie, or shift blame be so important in Patterson's evaluation?
2. Do any of the experiments described by Patterson, or the criteria used to interpret the results, call into question the methodology researchers in this field use?

3. Which of the incidents described by Patterson seems the most persuasive to you in suggesting Koko's linguistic capabilities? (You may wish to consult Koko's website, where Koko is available for conversations: www.gorilla.org)

4. Francine Patterson presents behavioral evidence that Koko is capable of deception. Why would the capacity to deceive be useful in suggesting a higher level of communication?

APPENDIX C: IELTS READING COMPONENT

THE IELTS TEST

READING

READING PASSAGE 1

You should spend about 20 minutes on Questions 1–13 which are based on Reading Passage 1 below.

Green Wave Washes Over Mainstream Shopping

Research in Britain has shown that 'green consumers' continue to flourish as a significant group amongst shoppers. This suggests that politicians who claim environmentalism is yesterday's issue may be seriously misjudging the public mood.

A report from Mintel, the market research organisation, says that despite recession and financial pressures, more people than ever want to buy environmentally friendly products and a 'green wave' has swept through consumerism, taking in people previously untouched by environmental concerns. The recently published report also predicts that the process will repeat itself with 'ethical' concerns, involving issues such as fair trade with the Third World and the social record of businesses. Companies will have to be more honest and open in response to this mood.

Mintel's survey, based on nearly 1,000 consumers, found that the proportion who look for green products and are prepared to pay more for them has climbed from 53 per cent in 1990 to around 60 per cent in 1994. On average, they will pay 13 per cent more for such products, although this percentage is higher among women, managerial and professional groups and those aged 35 to 44.

Between 1990 and 1994 the proportion of consumers claiming to be unaware of or unconcerned about green issues fell from 18 to 10 per cent but the number of green spenders among older people and manual workers has risen substantially. Regions such as Scotland have also caught up with the south of England in their environmental concerns. According to Mintel, the image of green consumerism as associated in the past with the more eccentric members of society has virtually disappeared. The consumer research manager for Mintel, Angela Hughes, said it had become firmly established as a mainstream market. She explained that as far as the average person is concerned environmentalism has not 'gone off the boil'. In fact, it has spread across a much wider range of consumer groups, ages and occupations.

Mintel's 1994 survey found that 13 per cent of consumers are 'very dark green', nearly always buying environmentally friendly products, 28 per cent are 'dark green', trying 'as far as possible' to buy such products, and 21 per cent are 'pale green' – tending to buy green products if they see them. Another 26 per cent are 'armchair greens'; they said they care about environmental issues but their concern does not affect their spending habits. Only 10 per cent say they do not care about green issues.

Four in ten people are 'ethical spenders', buying goods which do not, for example, involve dealings with oppressive regimes. This figure is the same as in 1990, although the number of 'armchair ethicals' has risen from 28 to 35 per cent and only 22 per cent say they are unconcerned now, against 30 per cent in 1990. Hughes claims that in the twenty-first century, consumers will be encouraged to think more about the entire history of the products and services they buy, including the policies of the companies that provide them and that this will require a greater degree of honesty with consumers.

Among green consumers, animal testing is the top issue – 48 per cent said they would be deterred from buying a product it if had been tested on animals – followed by concerns regarding irresponsible selling, the ozone layer, river and sea pollution, forest destruction, recycling and factory farming. However, concern for specific issues is lower than in 1990, suggesting that many consumers feel that Government and business have taken on the environmental agenda.

Questions 33–40

Classify the following statements as representing

A *the writer's fears about the Human Genome Project*
B *other people's fears about the Project reported by the writer*
C *the writer's reporting of facts about the Project*
D *the writer's reporting of the long-term hopes for the Project*

Write the appropriate letters A–D in boxes 33–40 on your answer sheet.

33 The Project will provide a new understanding of major diseases.

34 All the components which make up DNA are to be recorded and studied.

35 Genetic monsters may be created.

36 The correct order and inter-relation of all genetic data in all DNA will be mapped.

37 Parents will no longer worry about giving birth to defective offspring.

38 Being 'human' may be defined solely in terms of describable physical data.

39 People may be discriminated against in new ways.

40 From past experience humans may not use this new knowledge wisely.

THE IELTS TEST – Answer Key

ACADEMIC READING

Each question correctly answered scores 1 mark.

Reading Passage 1, Questions 1–13

1 YES
2 NO
3 YES
4 NOT GIVEN
5 NO
6 NOT GIVEN
7 B
8 B
9 C
10 honesty and openness
11 consumers
12 armchair ethicals
13 social record

Reading Passage 2, Questions 14–26

14 D
15 B
16 D
17 C
18 NO
19 YES
20 YES
21 NOT GIVEN
22 F
23 C
24 J
25 I
26 C

Reading Passage 3, Questions 27–40

27 Apollo (space) programme
28 (early) next century
29 7,000
30 disease
31 muscular dystrophy
32 cystic fibrosis
33 D
34 C
35 B
36 C
37 D
38 B
39 A
40 A

Questions 1–6

Do the following statements agree with the claims of the writer of Reading Passage 1?
In boxes 1–6 on your answer sheet write

YES *if the statement agrees with the claims of the writer*
NO *if the statement contradicts the claims of the writer*
NOT GIVEN *if it is impossible to say what the writer thinks about this*

1 The research findings report commercial rather than political trends.

2 Being financially better off has made shoppers more sensitive to buying 'green'.

3 The majority of shoppers are prepared to pay more for the benefit of the environment according to the research findings.

4 Consumers' green shopping habits are influenced by Mintel's findings.

5 Mintel have limited their investigation to professional and managerial groups.

6 Mintel undertakes market surveys on an annual basis.

Questions 7–9

Choose the appropriate letters A–D and write them in boxes 7–9 on your answer sheet.

7 Politicians may have 'misjudged the public mood' because ...

A they are pre-occupied with the recession and financial problems.
B there is more widespread interest in the environment agenda than they anticipated.
C consumer spending has increased significantly as a result of 'green' pressure.
D shoppers are displeased with government policies on a range of issues.

8 What is Mintel?

A an environmentalist group
B a business survey organisation
C an academic research team
D a political organisation

9 A consumer expressing concern for environmental issues without actively supporting such principles is ...

A an 'ethical spender'.
B a 'very dark green' spender.
C an 'armchair green'.
D a 'pale green' spender.

Questions 10–13

Complete the summary using words from the box below.
Write your answers in boxes 10–13 on your answer sheet.

NB There are more answers than spaces, so you will not use them all.

The Mintel report suggests that in future companies will be forced to practise greater ... **(10)** ... in their dealings because of the increased awareness amongst ... **(11)** ... of ethical issues. This prediction is supported by the growth in the number of ... **(12)** ... identified in the most recent survey published. As a consequence, it is felt that companies will have to think more carefully about their ... **(13)** ... .

environmental research	armchair ethicals
honesty and openness	environmentalists
ethical spenders	consumers
politicians	political beliefs
social awareness	financial constraints
social record	

READING PASSAGE 2

You should spend about 20 minutes on Questions 14–26 which are based on Reading Passage 2 below.

A There is a great concern in Europe and North America about declining standards of literacy in schools. In Britain, the fact that 30 per cent of 16 year olds have a reading age of 14 or less has helped to prompt massive educational changes. The development of literacy has far-reaching effects on general intellectual development and thus anything which impedes the development of literacy is a serious matter for us all. So the hunt is on for the cause of the decline in literacy. The search so far has focused on socio-economic factors, or the effectiveness of 'traditional' versus 'modern' teaching techniques.

B The fruitless search for the cause of the increase in illiteracy is a tragic example of the saying 'They can't see the wood for the trees'. When teachers use picture books, they are simply continuing a long-established tradition that is accepted without question. And for the past two decades, illustrations in reading primers have become increasingly detailed and obtrusive, while language has become impoverished – sometimes to the point of extinction.

C Amazingly, there is virtually no empirical evidence to support the use of illustrations in teaching reading. On the contrary, a great deal of empirical evidence shows that pictures interfere in a damaging way with all aspects of learning to read. Despite this, from North America to the Antipodes, the first books that many school children receive are totally without text.

D A teacher's main concern is to help young beginner readers to develop not only the ability to recognise words, but the skills necessary to understand what these words mean. Even if a child is able to read aloud fluently, he or she may not be able to understand much of it: this is called 'barking at text'. The teacher's task of improving comprehension is made harder by influences outside the classroom. But the adverse effects of such things as television, video games, or limited language experiences at home, can be offset by experiencing 'rich' language at school.

E Instead, it is not unusual for a book of 30 or more pages to have only one sentence full of repetitive phrases. The artwork is often marvellous, but the pictures make the language redundant, and the children have no need to imagine anything when they read such books. Looking at a picture actively prevents children younger than nine from creating a mental image, and can make it difficult for older children. In order to learn how to comprehend, they need to practise making their own meaning in response to text. They need to have their innate powers of imagination trained.

F As they grow older, many children turn aside from books without pictures, and it is a situation made more serious as our culture becomes more visual. It is hard to wean children off picture books when pictures have played a major part throughout their formative reading experiences, and when there is competition for their attention from so many other sources of entertainment. The least intelligent are most vulnerable, but tests show that even intelligent children are being affected. The response of educators has been to extend the use of pictures in books and to simplify the language, even at senior levels. The Universities of Oxford and Cambridge recently held joint conferences to discuss the noticeably rapid decline in literacy among their undergraduates.

G Pictures are also used to help motivate children to read because they are beautiful and eye-catching. But motivation to read should be provided by listening to stories well read, where children imagine in response to the story. Then, as they start to read, they have this experience to help them understand the language. If we present pictures to save children the trouble of developing these creative skills, then I think we are making a great mistake.

H Academic journals ranging from educational research, psychology, language learning, psycholinguistics, and so on cite experiments which demonstrate how detrimental pictures are for beginner readers. Here is a brief selection:

I The research results of the Canadian educationalist Dale Willows were clear and consistent: pictures affected speed and accuracy and the closer the pictures were to the words, the slower and more inaccurate the child's reading became. She claims that when children come to a word they already know, then the pictures are unnecessary and distracting. If they do not know a word and look to the picture for a clue to its meaning, they may well be misled by aspects of the pictures which are not closely related to the meaning of the word they are trying to understand.

J Jay Samuels, an American psychologist, found that poor readers given no pictures learnt significantly more words than those learning to read with books with pictures. He examined the work of other researchers who had reported problems with the use of pictures and who found that a word without a picture was superior to a word plus a picture. When children were given words and pictures, those who seemed to ignore the pictures and pointed at the words learnt more words than the children who pointed at the pictures, but they still learnt fewer words than the children who had no illustrated stimuli at all.

Questions 14–17

Choose the appropriate letters A–D and write them in boxes 14–17 on your answer sheet.

14 Readers are said to 'bark' at a text when ...

A they read too loudly.
B there are too many repetitive words.
C they are discouraged from using their imagination.
D they have difficulty assessing its meaning.

15 The text suggests that ...

A pictures in books should be less detailed.
B pictures can slow down reading progress.
C picture books are best used with younger readers.
D pictures make modern books too expensive.

16 University academics are concerned because ...

A young people are showing less interest in higher education.
B students cannot understand modern academic texts.
C academic books are too childish for their undergraduates.
D there has been a significant change in student literacy.

17 The youngest readers will quickly develop good reading skills if they ...

A learn to associate the words in a text with pictures.
B are exposed to modern teaching techniques.
C are encouraged to ignore pictures in the text.
D learn the art of telling stories.

Questions 18–21

Do the following statements agree with the information given in Reading Passage 2?
In boxes 18–21 on your answer sheet write

YES	*if the statement agrees with the information*
NO	*if the statement contradicts the information*
NOT GIVEN	*if there is no information about this in the passage*

18 It is traditionally accepted that children's books should contain few pictures.

19 Teachers aim to teach both word recognition and word meaning.

20 Older readers are having difficulty in adjusting to texts without pictures.

21 Literacy has improved as a result of recent academic conferences.

Questions 22–25

Reading Passage 2 has ten paragraphs, A–J. Which paragraphs state the following information? Write the appropriate letters A–J in boxes 22–25 on your answer sheet.

NB There are more paragraphs than summaries, so you will not use them all.

22 The decline of literacy is seen in groups of differing ages and abilities.

23 Reading methods currently in use go against research findings.

24 Readers able to ignore pictures are claimed to make greater progress.

25 Illustrations in books can give misleading information about word meaning.

Question 26

From the list below choose the most suitable title for the whole of Reading Passage 2. Write the appropriate letter A–E in box 26 on your answer sheet.

A The global decline in reading levels
B Concern about recent educational developments
C The harm that picture books can cause
D Research carried out on children's literature
E An examination of modern reading styles

READING PASSAGE 3

You should spend about 20 minutes on Questions 27–40 which are based on Reading Passage 3 below.

IN SEARCH OF THE HOLY GRAIL

It has been called the Holy Grail of modern biology. Costing more than £2 billion, it is the most ambitious scientific project since the Apollo programme that landed a man on the moon. And it will take longer to accomplish than the lunar missions, for it will not be complete until early next century. Even before it is finished, according to those involved, this project should open up new understanding of, and new treatments for, many of the ailments that afflict humanity. As a result of the Human Genome Project, there will be new hope of liberation from the shadows of cancer, heart disease, auto-immune diseases such as rheumatoid arthritis, and some psychiatric illnesses.

The objective of the Human Genome Project is simple to state, but audacious in scope: to map and analyse every single gene within the double helix of humanity's DNA[1]. The project will reveal a new human anatomy – not the bones, muscles and sinews, but the complete genetic blueprint for a human being. Those working on the Human Genome Project claim that the new genetical anatomy will transform medicine and reduce human suffering in the twenty-first century. But others see the future through a darker glass, and fear that the project may open the door to a world peopled by Frankenstein's monsters and disfigured by a new eugenics[2].

The genetic inheritance a baby receives from its parents at the moment of conception fixes much of its later development, determining characteristics as varied as whether it will have blue eyes or suffer from a life-threatening illness such as cystic fibrosis. The human genome is the compendium of all these inherited genetic instructions. Written out along the double helix of DNA are the chemical letters of the genetic text. It is an extremely long text, for the human genome contains more than 3 billion letters. On the printed page it would fill about 7,000 volumes. Yet, within little more than a decade, the position of every letter and its relation to its neighbours will have been tracked down, analysed and recorded.

Considering how many letters there are in the human genome, nature is an excellent proof-reader. But sometimes there are mistakes. An error in a single 'word' – a gene – can give rise to the crippling condition of cystic fibrosis, the commonest genetic disorder among Caucasians. Errors in the genetic recipe for haemoglobin, the protein that gives blood its characteristic red colour and which carries oxygen from the lungs to the rest of the body, give rise to the most common single-gene disorder in the world: thalassaemia. More than 4,000 such single-gene defects are known to afflict humanity. The majority of them are fatal; the majority of the victims are children.

None of the single-gene disorders is a disease in the conventional sense, for which it would be possible to

APPENDIX D: CONTENT MASTERY MULTIPLE-CHOICE TEST

Name: May 30, 2006

FLED 104
Follow-up Sessions
Final exam

Read the following statements and circle the correct option.

1. Language is_____; grammar is_____.

a) infinite/ finite
b) finite/recursive
c) infinite/recursive
d) recursive/infinite

2. The _____ of a language determines the properties of any sentence such as word order in that language.

a) history
b) development
c) grammar
d) morphology

3. Language develops in the child through _____.

a) language specific training
b) exposure to speech
c) literacy
d) imitation

4. According to Chomsky, Universal Grammar is _____.

a) determined genetically
b) a psychological phenomenon
c) set by experience
d) a physical phenomenon

5. Language acquisition device refers to _____.

a) a language device that converts input to output
b) a metaphor for the innate knowledge of language
c) a learning mechanism responsible for imitating adult speech
d) the language generated by the child's grammar

6. Genie, the wild child, was not able to speak language properly because_____.

a) her brain was not lateralized
b) her I.Q was not developed
c) she had no exposure to language
d) she had no ability to acquire language

7. Each of the following is a language universal except that _____.

a) languages belong to language families
b) languages have nouns and verbs
c) languages have a way of referring to past time
d) languages have consonants and vowels

8. According to Innateness Hypothesis, a Chinese baby adopted by a Turkish family and raised in Turkey _____.

a) will speak both Chinese and Turkish
b) will speak Turkish only
c) will speak Turkish with a Chinese accent
d) will at first speak Turkish and then Chinese

9. Each of the following is a language *learning* theory except_____.

a) Behaviorism
b) Cognitivism
c) Nativism
d) Structuralism

10. Which of the following is true for language learning?

a) Competence precedes performance in both children and adults.
b) Children cannot produce structures they have not been exposed to.
c) We cannot learn a language without a focus on its grammar.
d) Features of a language which are most frequent are easiest to learn.

11. When human beings experience difficulty in producing and/or understanding speech, we normally have a case of _____.

a) dyslexia
b) autism
c) lateralization
d) aphasia

12. Putting the limitations of time and memory aside, the_____ property of language allows people to produce sentences of any length.

a) structure dependent
b) recursive
c) stimulus controlled
d) infinite

13. Which of the following could be an example of "overgeneralization" which is observed in children acquiring English as their first language?

a) Daddy eated candy.
b) Daddy goed to job.
c) Daddy lunched.
d) Daddy held doggy.

14. Language change is most likely to occur in the area of _____.

a) syntax
b) lexis
c) discourse
d) morphology

15. Which of the following statements is true for language?

a) Primitive people's languages do not have grammatical rules.
b) Primitive people's languages are simpler than Western languages.
c) Primitive people's languages can be as complex as Western languages.
d) Primitive people's languages cannot adequately reflect their complex words.

APPENDIX E: WRITING PROMPTS (FIRST WRITING)

Explain (in no less than 500 words) how children learn their mother tongue in light of Behaviorist, Nativist, and Interactionist perspectives. Which position do you think reflects your acquiring Turkish the best? Why?

APPENDIX F: WRITING PROMPTS (SECOND WRITING)

Discuss (in no less than 500 words) whether species other than humans can possess a capacity for language.

APPENDIX G: METACOGNITIVE AWARENESS IN L1 QUESTIONNAIRE

Name: Gender:

The Following statements are about your silent reading in *Turkish*. Please indicate the level of your agreement or disagreement with each statement by circling the appropriate number: 1 indicates strong disagreement, 5 indicates strong agreement.

Thank you for your participation.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.When reading silently in Turkish, I am able to anticipate what will come next in the text.	1	2	3	4	5
2. When reading silently in Turkish, I am able to recognize the differences between main points and supporting details.	1	2	3	4	5
3. When reading silently in Turkish, I am able to relate information which comes next in the text to previous information in the text.	1	2	3	4	5
4. When reading silently in Turkish, I am able to question the significance or truthfulness of what the author says.	1	2	3	4	5
5. When reading silently in Turkish, I am able to use my prior knowledge and experience to understand the content of the text I am reading.	1	2	3	4	5
6. When reading silently in Turkish, I have a good sense of when I understand something and when do not.	1	2	3	4	5
When reading silently in Turkish, if I don't understand something,	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. I keep on reading and hope for clarification further on.	1	2	3	4	5
8. I reread the problematic part.	1	2	3	4	5
9. I go back to a point before the prob1ematic part and reread from there.	1	2	3	4	5
10. I look up unknown words in a dictionary.	1	2	3	4	5
11. I give up and stop reading.	1	2	3	4	5
When reading silently in Turkish, the things I do to read effectively are to focus on	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree

12. mentally sounding out parts of the words.	1	2	3	4	5
13.understanding the meaning of each word.	1	2	3	4	5
14.getting the overall meaning of the text.	1	2	3	4	5
15.being able to pronounce each whole word.	1	2	3	4	5
16. the grammatical structures.	1	2	3	4	5
17.relating the text to what I already know about the topic.	1	2	3	4	5
18. looking up words in the dictionary.	1	2	3	4	5
19. the details of the content.	1	2	3	4	5
20.the organization of the text.	1	2	3	4	5
When reading silently in Turkish, things that make the reading difficult are	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21. the sounds of the individual words.	1	2	3	4	5
22. pronunciation of the words.	1	2	3	4	5
23. recognizing the words.	1	2	3	4	5
24. the grammatical structures.	1	2	3	4	5
25. the alphabet.	1	2	3	4	5
26. relating the text to what I already know about the topic.	1	2	3	4	5
27. getting the overall meaning of the text.	1	2	3	4	5
28. the organization of the text.	1	2	3	4	5
The best reader I know in Turkish is a good reader because of his/her ability to	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
29. recognize words.	1	2	3	4	5
30. sound out words.	1	2	3	4	5

31. understand the overall meaning of a text.	1	2	3	4	5
32. use a dictionary.	1	2	3	4	5
33. guess at word meanings.	1	2	3	4	5
34. integrate the information in the text with what he/she already knows.	1	2	3	4	5
35. focus on details of the content.	1	2	3	4	5
36.grasp the organization of the text.	1	2	3	4	5

APPENDIX h: METACOGNITIVE AWARENESS IN L2 QUESTIONNAIRE

Name: Gender:
Age:

The Following statements are about your silent reading in *English*. Please indicate the level of your agreement or disagreement with each statement by circling the appropriate number: 1 indicates strong disagreement, 5 indicates strong agreement.
Thank you for your participation.

	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
1.When reading silently in English, I am able to anticipate what will come next in the text.	1	2	3	4	5
2. When reading silently in English, I am able to recognize the differences between main points and supporting details.	1	2	3	4	5
3. When reading silently in English, I am able to relate information which comes next in the text to previous information in the text.	1	2	3	4	5
4. When reading silently in English, I am able to question the significance or truthfulness of what the author says.	1	2	3	4	5
5. When reading silently in English, I am able to use my prior knowledge and experience to understand the content of the text I am reading.	1	2	3	4	5
6. When reading silently in English, I have a good sense of when I understand something and when do not.	1	2	3	4	5
When reading silently in English, if I don't understand something,	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
7. I keep on reading and hope for clarification further on.	1	2	3	4	5
8. I reread the problematic part.	1	2	3	4	5
9. I go back to a point before the prob1ematic part and reread from there.	1	2	3	4	5
10. I look up unknown words in a dictionary.	1	2	3	4	5
11. I give up and stop reading.	1	2	3	4	5
When reading silently in English, the things I do to read effectively are to focus on	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
12. mentally sounding out parts of the words.	1	2	3	4	5

13.understanding the meaning of each word.	1	2	3	4	5
14.getting the overall meaning of the text.	1	2	3	4	5
15.being able to pronounce each whole word.	1	2	3	4	5
16. the grammatical structures.	1	2	3	4	5
17.relating the text to what I already know about the topic.	1	2	3	4	5
18. looking up words in the dictionary.	1	2	3	4	5
19. the details of the content.	1	2	3	4	5
20.the organization of the text.	1	2	3	4	5
When reading silently in English, things that make the reading difficult are	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
21. the sounds of the individual words.	1	2	3	4	5
22. pronunciation of the words.	1	2	3	4	5
23. recognizing the words.	1	2	3	4	5
24. the grammatical structures.	1	2	3	4	5
25. the alphabet.	1	2	3	4	5
26. relating the text to what I already know about the topic.	1	2	3	4	5
27. getting the overall meaning of the text.	1	2	3	4	5
28. the organization of the text.	1	2	3	4	5
The best reader I know in English is a good reader because of his/her ability to	Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
29. recognize words.	1	2	3	4	5
30. sound out words	1	2	3	4	5
31. understand the overall meaning of a text.	1	2	3	4	5

32. use a dictionary.	1	2	3	4	5
33. guess at word meanings.	1	2	3	4	5
34. integrate the information in the text with what he/she already knows.	1	2	3	4	5
35. focus on details of the content.	1	2	3	4	5
36. grasp the organization of the text.	1	2	3	4	5

APPENDIX I: DEMOGRAPHIC INFORMATION SURVEY

General Information

Name:
Surname:

Class: (circle one number)

Freshman …☐ other ….. ☐ Irregular …☐

Age:
Sex: Female..... ☐ Male.....☐

What is your G.P.A (grade point average)? .....

Linguistic Information

What language did you speak FIRST as a child? .....

What languages do you speak well enough to conduct a conversation?

Turkish…… ☐
English…… ☐
other (specify)…… ☐
other (specify)…… ☐

In which language can you express yourself most easily? .....

Parental Information

What was the highest level of schooling that your mother ever completed? (Circle one only)

No schooling ☐
Primary school ☐
Secondary ☐
High school ☐
University ☐
Don't know ☐

What's your mother's occupation?.....

What was the highest level of schooling that your father ever completed? (Circle one only)

No schooling ☐
Primary school ☐
Secondary ☐
High school ☐
University ☐
Don't know ☐

What's your father's occupation?.....

What is the best estimate of total monthly income for your parents?

Below 500YTL ☐
500YTL- 999 YTL ☐
1.000YTL-1.499YTL ☐
1.500YTL-2.000YTL ☐
Above 2.000YTL ☐