CHAPTER 2

Review of Related Literature

2.0 Introduction

The previous chapter discussed various aspects related to language teaching of technical education in Thailand. In particular, it tried to illustrate an overall picture of ELT in Thailand and language curriculum for technical education in particular for the Information Technology Programme. More importantly, it also discussed some key factors affecting Thai students’ communicative competence. Finally, it argued the need for a CBI approach for developing language materials, the focus of the present study. This chapter provides a review of literature on the notion of Content-Based Instruction, the theoretical framework for materials development, materials evaluation and a taxonomy of educational objectives as a means for analyzing learning progress. First, a discussion of Content-Based Instruction will be presented.

2.1 Content-Based Instruction

Section 1.4.2 - 1.4.4 dealt with the rationale for CBI for the present study and its successful implementation in EFL settings particularly in Thailand. To have a better understanding, this section elaborates more on what CBI is in relation to a similar concept, ESP. It also examines its three teaching models: sheltered, adjunct and theme-based. Finally, it argues for the teaching model adopted for the development of materials.

2.1.1 Definition

In the book ‘Approaches and Methods in Language Teaching’, Richards and Rodgers (2001) categorized Content-Based Instruction (CBI) as one of the current communicative approaches and referred to it as second language teaching in which the focus of instruction is organized around the content or information that students will acquire, rather than around a linguistic or other type of syllabus. This definition appears to be on the ground of ‘Language is purposeful’. Language is used for communicating purpose: to understand and transmit concepts. Brinton et.al. (2006) define CBI as the concurrent teaching of academic subject matter and second language skills. Considering the definitions, it has a close relationship to English for
Specific Purposes (ESP). Johns (1997) claims that ESP is a super ordinate term of all ESL/EFL teaching, and CBI is a central force in this movement. He argues that ESP and CBI are similar in the sense that they grow out of the dissatisfaction of the separation of language instruction from the contexts and demands of real language use. The general purpose of language instruction cannot prepare students for linguistic and contextual needs of the real world e.g. workplace or academic classroom. In both movements, an effort is made to provide the students opportunities to discover and use genuine discourse from the real world in the language classroom to ensure that classroom content reflects the real world needs. Specifically, language activity should be designed to assist students to interact with content and discourse in cognitively demanding manners. It, thus, can be claimed that both ESP and CBI strengthen transferring of language skills and content knowledge to real world tasks.

However, Johns also distinguishes these two movements in terms of instructional setting. Generally, CBI is limited to the English as a second language (ESL) setting viz. the United Stated, the United Kingdom, Canada, Australia or New Zealand. On the other hand, ESP is predominantly found in the countries in which English is taught as a foreign language. A variety of terms, in ESL settings, have been used to refer to a language course in which language and content are integrated viz. Workplace ESL and English for Academic Purposes. Similar concepts like Technical and Further Education for Immigrant Students (TAFE) and English in the Workplace (EWP) have been used in Australia. Recently, CLIL (content and language integrated learning) is another term used among European countries (Gomez and Garrido, 2009).

CBI and ESP can be distinguished in some other ways too: type of students and courses, focused skills and related research in terms of scope and focus. ESP courses are specially designed for adult or young adult learners who have immediate and specific needs. Therefore, they tend to be short, needs based and focused. Regularly, ESP has been limited to reading skill because students in foreign countries really need to access science and technology texts widely published in English. In CBI course, it is mostly organized for those students who are in primary and secondary education with sheltered English. It is a multi-skill approach in which
four language skills are integrated. The focus of instruction and evaluation tends to be on content knowledge.

Finally, ESP has a long research tradition drawn from linguistic analyses, discourse studies and pragmatics. There are numerous supports from the text-based research than on pedagogy. On the other hand, CBI practitioners seem to focus almost exclusively on pedagogy discussing student affect, instructional strategies, and classroom models. As a result, there is inadequate CBI research to support its claims. Table 2.1 summarizes the distinguishing features of CBI and ESP.

<table>
<thead>
<tr>
<th>Features</th>
<th>CBI</th>
<th>ESP</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instructional setting</td>
<td>ESL countries: US, UK, Canada, Australia</td>
<td>EFL countries: China, Japan, Korea, Thailand</td>
</tr>
<tr>
<td>Population</td>
<td>School-age students</td>
<td>Young adults or adults</td>
</tr>
<tr>
<td>type of course</td>
<td>Formal education in primary and secondary level</td>
<td>short, needs-based and focused</td>
</tr>
<tr>
<td>Focused skills</td>
<td>Four-skill approach</td>
<td>One skill –reading</td>
</tr>
<tr>
<td>Scope of theory and research</td>
<td>Pedagogy-based</td>
<td>Long tradition research - based</td>
</tr>
</tbody>
</table>

Table 2.1 Distinguishing features of CBI and ESP

In sum, some of the terms used to represent content and language integrated approach can include CBI, ESP, TAFE, EWP and CLIL. These approaches are different in some aspects viz. instructional setting, population, type of course, focused skills and scope of theory and research.

2.1.2 Prototypical Models of CBI

Recently, several alternative instructional models have been developed to emphasize the benefits of introducing language and content instruction in the language classroom. Stoller and Grabe (1997) identify eight approaches to CBI: Center of Applied Linguistics (CAL), EAP, University-Level Foreign Language CBI, Discoursal Knowledge Structure, Genre-based Approach, Language Immersion Programme, Cognitive Academic Language Learning Approach (CALLA) and Whole Language Instruction. Though these approaches may differ in theoretical and practical orientation, they uniformly view language as a medium for content learning.
and content as a resource for language learning. These approaches may follow any of three prototypical models: sheltered, adjunct or theme-based instructions, which are discussed in detail below.

A) Sheltered instruction

When students are not able to grasp course concepts taught in the second language, teachers may need to simplify complex concepts and modify the appropriate delivery of content information to make them more accessible and comprehensible for those students. This pedagogical adjustment is known as sheltered English. Rosen and Sasser (1997) argue that such sheltered lessons need to provide cognitive and linguistic scaffolds for English language learners through modeling, demonstration and interaction with the teacher and peers. Then students use English language skills to demonstrate comprehension of content information. In this way, the focus of instruction is to facilitate students to cope with the challenging academic language and concepts and provide greater access to core curricula as the following assertion

It seems reasonable to expect that ESL students are acquiring the language and concepts they need to advance in course curricula as well as the active learning and study skills they need to succeed in mainstream classes. Frequently, however, the primary focus in sheltered classes is on providing comprehensible input to merely increase the ESL students’ ability to understand the particular lesson of the day. In other words, the majority of class time is dedicated to teacher-driven efforts to help students understand the new language and concepts needed to accomplish a specific task (Kinsella, 1997:50).

The sheltered courses are often organized in the elementary and secondary immersion programmes in which ESL students are sheltered from competition with native-speakers of English. In addition, it is also found that this type of course is predominantly arranged in most of the bridge courses of the university for nonnative speaking students prior to their joining the academic mainstream.
B) Adjunct instruction

In this model, two aims are of equal important: to help students master both the language and content domains, at the same time introducing students to general discourse to assist them in developing transferable academic skills. Language and content teachers assume responsibilities for their respective courses. In the adjunct model, ESL students enroll in a content course where they have to compete with native speakers and in a language course where they are segregated. At the end of the semester, they receive separate academic credit for both courses.

In practice, Gee (1997) asserts that to successfully implement the adjunct courses, the ESL teacher must establish a strong working relationship with content instructors. Gee suggests two techniques for collaborative teaching used in her adjunct courses. Firstly, it is to find out content instructor’s concerns relating to language proficiency in order to respond to his/her needs by incorporating exercises to develop language functions and skills necessary for academic success in content course. Secondly, regular formal and informal meetings should be organized. It is a place where teachers can share information concerning language and content teaching viz. students’ progress of the class in general and of particular students who are in need of help, ESL methodology, content clarification or restating teaching goals to negotiate a balance between the remaining course objectives and what students can realistically complete. Moreover, interaction between language and content teachers can also build trust in each other and respect for two different disciplines.

C) Theme-based instruction

Theme-based instruction refers to a language class in which course content revolves around theme or topics. Incorporating a series of topics appropriate to students’ needs and interests is obviously crucial to the success of these courses. The content-area topic provides a meaningful context to facilitate students to develop language skills and functions. Basically, it is applicable at all levels of language proficiency as opposed to sheltered and adjunct courses. The sheltered model appears most appropriate for intermediate to high intermediate levels, while
the adjunct model requires high intermediate to advanced levels of language proficiency to understand grade-and age-appropriate subject-area concepts.

Interestingly, theme-based courses have been launched in most of the educational contexts. Stoller and Grabe (1997) point out that at the elementary level a range of thematic types may be included as found in Walmsley’s book, that is, content-area themes (e.g. themes drawn from social studies, math, health or music), calendar-related themes (e.g. seasons, national holidays, anniversaries of specific events), conceptual themes (e.g. themes that are organize around a abstract concepts such as ‘courage’ or ‘growing up’), biographical themes (e.g. a famous person), current event themes (e.g. local or national issues) and form themes (e.g. genres such as myths, legends or science fiction) (Walmsley, 1994). In secondary and vocational education, theme-based curricula are prevalent in the science, math, social studies, and literature classrooms. Strikingly it is also becoming more common in intensive English programmes organized in the institutions.

It can be concluded that content is a point for departure for these three models. However, they differ in many ways. Brinton et al. (2006) differentiate them in many aspects: course purposes, instructional format, instructor responsibility, student population and focus of evaluation. In theme-based course, the primary learning purpose is to help students to develop second language competence by using the course content. Contrarily, the learning focus in the sheltered course is to enhance content knowledge. It is also assumed that students acquire incidental language while they are focusing on information. The focus of learning purposes can imply other types of differences. Generally, theme-based model is adopted in ESL courses in which language teacher is responsible for language and content instruction. More importantly, language teachers to a certain degree should be knowledgeable or have experience in content teaching. Students enrolled in these types of courses are usually nonnative speakers. Typically, sheltered language course is taught by content teacher who can use the target language as a medium of instruction. S/he may need to provide a variety of linguistic scaffolds to facilitate nonnative students to understand the grade-level subject matter concepts. Finally, students in the theme-based course are assessed in terms of their language
proficiency and earn language credit while those in the sheltered course are evaluated on development of content knowledge and earn subject matter credit.

The adjunct course can be viewed as the link of content and ESL courses as they have two equal aims: to help students develop second language competence and content knowledge simultaneously. Students enrolled in these types of courses may be both native and nonnative speakers while those in the theme-based and sheltered models are nonnative. However, nonnative students should have at least high intermediate to advanced L2 proficiency in order to catch up with native students. Table 2.2 summarizes the distinguishing features of the three content-based models.

### Table 2.2: Distinguishing features of three CBI models taken from *Content-based second language instruction* by Brinton, Donna M. et.al. 2006

<table>
<thead>
<tr>
<th>Features</th>
<th>Sheltered</th>
<th>Adjunct</th>
<th>Theme-Based</th>
</tr>
</thead>
<tbody>
<tr>
<td>Primary purposes</td>
<td>Help students master content material</td>
<td>• Help students master content material.</td>
<td>Help students develop L2 competence within specific topic areas</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Introduce students to L1 academic discourse and develop transferable academic skills.</td>
<td></td>
</tr>
<tr>
<td>Instructional format</td>
<td>Content course</td>
<td>Linked content and ESL courses</td>
<td>ESL course</td>
</tr>
<tr>
<td>Instructional responsibilities</td>
<td>Content instructor responsible for content instruction while language instructor is responsible for language instruction.</td>
<td>Content instructor is responsible for content instruction.</td>
<td></td>
</tr>
<tr>
<td>Student Population</td>
<td>Nonnative speakers</td>
<td>• Nonnative and native speakers are integrated for content instruction.</td>
<td>Nonnative speakers</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Nonnative speakers are separated for language instruction.</td>
<td></td>
</tr>
<tr>
<td>Focus of evaluation</td>
<td>Content knowledge</td>
<td>• Content knowledge in content class</td>
<td>Language skills and functions in language class</td>
</tr>
<tr>
<td></td>
<td></td>
<td>• Language skills and functions in language class</td>
<td></td>
</tr>
</tbody>
</table>

In conclusion, differences of CBI teaching models provide some practical considerations concerning the appropriacy of the models to the teaching context of the present study. The adopted model significantly influences the design of materials.
Clearly, the primary aim of this present study is to facilitate IT students develop L2 competence to achieve the language syllabus. Assuming that contextualization and familiarity of topics can enhance the quality of learning involvement, the study thus incorporates content drawn from students’ field of study in the developed materials. Due to its first introduction to the teaching context and practical reasons, the language teacher alone will be responsible for both language and content instruction. Considering the aim of the study and responsibility, the theme-based model seems to be the appropriate model for the present study. However, to ensure that the course content utilized in the study is appropriate to the students’ grade level, some suggestions for topic selection are derived after the consultation with the content teachers. Moreover, content learning is also taken into account during the materials evaluation process.

These circumstances seem to go beyond the characteristics of the theme-based model. The approach adopted lies somewhere between the theme-based and adjunct models. Figure 2.1 shows the model adopted for materials development of the present study.

Like any other approach, a successful implementation of content-based programme involves numerous considerations: theoretical underpinnings, syllabus, materials and course design, programme administration, teacher preparation, student characteristics/needs and programme evaluation. Since the major focus of this present study is to develop CBI language materials for IT students, the following discussion will exclusively revolve around aspects of second language materials in particular CBI materials, the framework for materials and methods, grading and sequencing tasks and so on.
2.2 Materials construction

Having established the need for materials development in Chapter 1, it necessitates a close examination of the characteristics of CBI materials, the framework of context and syllabus, the process of materials writing, factors associated with grading tasks and some considerations for sequencing task. The characteristics of CBI materials are first discussed.

2.2.1 Characteristics of CBI materials

With the CBI goal of contextualized learning where students are taught useful language embedded within relevant discourse contexts, it necessitates authentic materials. Brinton et al. (2006) argue that in sheltered and adjunct courses, choice of authentic materials may include the use content textbooks. On the other hand, in theme-based course, language teachers have many different sources for materials. They may either use content textbooks or create their own content packets by assembling newspapers, articles, picture diagrams, film or video related to the thematic units. The use of authentic materials in the classroom dose not only expose students to real language closely related to their target situations, but also greatly influences learning motivation and gives them authentic cultural information (Berardo, 2006). However, given the authenticity of the materials, the less proficient second language students may be frustrated and not be able to cope with its complexity and density of information. The language teacher will have to find ways to make the materials more accessible. This can be done by creating exercises to help students utilize existing schemata, deleting unnecessary examples, adding supporting evidence or devising skills that allow them to utilize newly learned language and critical thinking skills.

Hutchinson & Waters (2001) also recommend that good materials should contain interesting texts, enjoyable activities and opportunities for learners to use their existing knowledge, skills, and content, which both learners and teachers can cope with. It should also provide a clear and coherent unit structure that will guide teachers and learners through various activities to maximize the chances of learning as well as models of correct and appropriate language use.
In order to develop CBI language materials, it is also important to realize some underlying principles of second language acquisition. Tomlinson (2008) suggests that second language materials should embrace the following qualities:

A) Materials should achieve impact, i.e. they should be able to attract the learners’ curiosity, interest and attention. This can be achieved when the materials writers know as much as possible about the learners and what is likely to attract their attention.

B) Materials should help learners to feel at ease. Researches in SLA show that language learners learn better when they are relaxed. Materials can make the learners more comfortable when many different activities are not crammed together but arranged with ample spacing supported with pictures that relate to the learner’s cultural contexts and encourage personal participation. Materials should have ‘voice’ of the writers in a way that they communicate to the learners directly.

C) Materials should help learners to develop confidence. The successful completion of simplified tasks cannot foster learners’ confidence. Materials should be slightly beyond their existing proficiency and challenging but achievable.

D) Materials should be perceived by learners as relevant and useful. Tomlinson suggests that choices of topic and task are an important factor to achieve perception of relevance and utility.

E) Materials should require and facilitate learner self-investment. This can be achieved by providing learners with choices of focus and activity or involving them in learner-centred discovery activities, like mini projects in which they are given responsibility for making decisions to complete the tasks.

F) Learners must be ready to acquire points being taught. This may be achieved by providing situations that enable learners to use language or learn linguistic features, not previously taught and slightly above their current language proficiency. The learners, thus, might be more attentive.

G) Materials should expose learners to language in authentic use. Authentic inputs should vary in style and stimulate the learners’ interaction. The students may not always produce language but mentally or physically respond to it.
H) Learners’ attention should be drawn to linguistic features of the input. It is agreed among researchers that raising linguistic awareness can help the learners to eventually acquire some of the linguistic features.

I) Materials should provide learners opportunities to use the target language for communication. This can enable learners to check their learning progress especially when the activities are slightly above their current level of proficiency.

J) Materials should take into account that the positive effects of instruction take place gradually rather than instantly. To promote natural second language acquisition, it is necessary to ensure that learners are repeatedly exposed to the linguistic inputs in communicative use in an adequate manner.

K) Materials should take into account that learners differ in learning styles. Learners’ learning style is variable and dependent upon learning factors. At a time, learners, for example, can become analytic learners when language learning takes place for the purpose of examination. At other times, they are likely to become kinaesthetic and experiential learners when learning takes place with a group of relaxed young adult learners.

L) Materials should take into account that learners differ in affective attitudes. Obviously, it is not always easy to cater for all affective variables but materials writers should diversify language instruction as much as possible based on the variety of cognitive styles.

M) Materials should permit a silent period at the beginning of instruction. Most researchers agree that a silent period allows learners to internalize functional grammar and develop language proficiency until they are eventually ready to start using second language.

N) Materials should maximize learning potential by involving learners in a variety of both left- and right-brain activities, which lead to mental and affective processing and more durable learning.

O) Materials should not rely too much on controlled practice. Tomlinson (2008) states that most researchers seem to agree with Ellis that ‘controlled practice appears to have insignificant long term effect on the accuracy with which new
structures are performed’ Ellis (1990:192) and ‘has little effect on fluency’ (Ellis and Rathbone, 1987)

P) Materials should provide opportunities for outcome feedback. When language learning is to achieve communicative purpose rather than just to practice linguistic features and the language produced by the learners is evaluated in relation to its intended purpose, the outcome feedback can become powerful and informative because learners are likely to benefit from both positive and negative feedback.

To sum up, the major characteristics of materials outlined above are concerned with not only authenticity, comprehensibility, but more with psychological and affective factors. However, it is found that ‘…the conventional TESOL approach to materials development focus attention only on linguistic, rather than on both content and linguistic’ (Coyle, 2010: 87). Therefore, ‘Good’ CBI materials should embrace the following characteristics.

i) Content authenticity: Assuming that the topics drawn from the students’ area of study are perceived as relevant, useful and interesting, these aspects have great effect on the students’ contribution to language learning.

ii) Appropriacy to students’ cognitive ability: Materials should not be too easy or intellectually challenging. Hence, it is important to provide materials at their grade-level as well as to build on the students’ background knowledge.

iii) Involvement of high-ordered thinking skills: Effective learning involves critical analysis of new information, connecting them to the already-known concepts and storing them in the long-term memory.

iv) Meaning orientation: CBI materials should provide learners opportunities for meaning negotiation. Students can acquire incidental English while they are focusing on information.

v) Provision of a variety of scaffoldings: Students may feel frustrated when dealing with content and language simultaneously. A variety of scaffoldings can potentially facilitate comprehension.
2.2.2 Framework of context and syllabus

There has been a growing interest in the area of course design and materials development. This interest may have stemmed from the realization that learners have specific learning goals and needs. For instance, Adult migrants’ specific needs may differ from those of young adult learners in higher education. The former most probably needs a specialized ESL programme, which includes survival English or English for the workplace while the latter may need such learning skills as understanding lecture, note taking, reading textbooks or making academic presentation in order to cope with English that concerns their field of interest. A language course can also be designed to meet the needs of learners who would like to only improve their basic interpersonal communicative skills such as socializing, telephoning, making suggestion or asking for directions. Accordingly, these goals may be taken as the basis for having different course design suited for specific purposes and interest. McDonough and Shaw (2003) propose a framework of language teaching in terms of context and syllabus. They illustrate its interrelation as shown in Figure 2.2

![Figure 2.2 Framework of language teaching](image)

A) Context: It directly involves two sub-factors; learners and educational setting. For learner factors, it is presumed that learning needs and a number of learners’ key characteristics like age, interests, level of proficiency, aptitude, mother tongue, academic and educational level, attitudes to learning motivation, reasons for learning, preferred learning styles and personality can greatly influence the planning decision. For the educational setting, the whole teaching and learning environment has to be accounted. Here, factors like the role of English in the school, teacher status, management and administration, support
personnel, availability of resources or physical environment have varying effects on course planning, syllabus design, the selection of materials and resources, and the appropriateness of methods.

The other vital component of a language teaching framework that needs to be examined in greater detail is the course syllabus.

**B) Syllabus:** It deals with specified goals, which lead to the selection of type of course content. Syllabus can be defined as the overall arrangement of what is to be taught and learned. In other words, it is a general statement, which will specify learning content in a particular language programme. The choice of topics, language items, required skills or task types will obviously reflect the type of syllabus appropriate for the programme. McDonough and Shaw identify six broad types of syllabus that include grammatical or structural, functional-notional, situational, skill-based, topic-based and task-based. Grammatical or structural syllabus mainly includes a list of discrete linguistic items. The second, functional-notional syllabus emerges from communicative movement. Its focus is on the function of language and content may be specified as describing objects, giving opinions, agreeing or disagreeing, complaining or apologizing. The third type, situational syllabus, focuses on everyday situations as in the restaurant, the shopping mall, in the post office and so on. The fourth, skills-based syllabus, puts emphasis on practicing the four basic language skills of communication as reading for information, making notes from a talk or writing an exam answer. The fifth is topic-based syllabus or theme-based syllabus. Topical themes as life in university, drugs, or fashion can be used as a point of departure. The sixth, task-based syllabus, consists of tasks and activities that learners will engage in the class, it is not of a list of linguistic elements, nor of description of what learners will be able to do at the end of a course.

Nunan (2008) categorizes syllabus into two broad types as product– oriented and process-oriented syllabuses. The former merely pays attention at the outcome of knowledge and skills that the learners gain as a result of instruction while the latter as its name suggests, focuses on the learning process or learning experiences during the course of instruction.
Richards and Rogers (2002) also suggest three broad theoretical views of language, which greatly influence the types of syllabus and the design of materials, that is, a structural view, a functional view and an interactional view. The structural view is seen as the most traditional one. Some grammar-oriented teaching methodologies embodied in this view are the well-known Audiolingual method, Total Physical Response as well as Silent Way. Though these methods vary in terms of practical orientation like procedure, type of activities and required materials, they share the language learning goal as to master discrete elements of linguistic system in which language items are introduced according to grammatical complexity. In the functional view, language is viewed as a tool for conveying meaning and functional purposes. Communicative movement subscribes to this view. The contents in communicative approach do not merely focus on linguistic elements, but appropriately employs a variety of communicative activities. The third view, interactional view, sees language as a vehicle to create and maintain social relations between individuals. Richards and Rodgers also identify some of the language teaching approaches or methods embodied in this view consist of Task-Based Language Teaching, Whole Language, Neurolinguistic Programming, Cooperative Language Learning and Content-Based Instruction. Though materials used in these approaches and methods may share some characteristics of those in other approaches, the emphasis is heavily on the authenticity of tasks and materials.

Interestingly, Graves (2005) discusses the tendency of the syllabus content in terms of the evolution of language teaching approaches, which conceptually overlaps as shown in Table 2.3.

<table>
<thead>
<tr>
<th>Participatory processes</th>
<th>Learning strategies</th>
<th>Content</th>
</tr>
</thead>
<tbody>
<tr>
<td>Culture</td>
<td>Tasks and activities</td>
<td>Competencies</td>
</tr>
<tr>
<td>Listening skills</td>
<td>Speaking skills</td>
<td>Reading skills</td>
</tr>
<tr>
<td>Function</td>
<td>Notion and topics</td>
<td>Communicative situations</td>
</tr>
<tr>
<td>Grammar</td>
<td>Pronunciation</td>
<td>Vocabulary</td>
</tr>
</tbody>
</table>

Table 2.3 Syllabus grid by Graves

The prevailing view for decades of structural view was the popularly so-called “one size fits all” approach in which the same textbook or same
grammatical pattern practice is applied to all groups of learners. However, currently there is a growing advent of new methods of language teaching. The paradigm shift of language teaching focus is on the function of language rather than on its structure. Language today is seen as used for communication purposes. Language proficiency is another area of focus, which involves the mastery of four basic language skills of communication: listening, speaking, reading and writing. With reference to the emphasis on the learning process to achieve the target learning outcomes, tasks and activities play a central role for language learning. Additionally, a number of competency-based language courses integrating characteristics of the communicative and task-based approaches have been developed to teach immigrants in the United States. The role of culture has become a growing interest as an underlying aspect of how one makes sense of something. In parallel with other current communicative approaches, content-based approach emerges from a combination of language learning and subject matter. It plays a critical role in bilingual programmes for children as well as in ESP courses and EAP courses. Since learners are the central focus of syllabus designing, the factors associated with learners are taken into account to promote self-awareness and learning strategies to achieve their learning goals. Learners are also invited to contribute to the process of course content selection so that what they learn in class can be perceived interesting and relevant.

In conclusion, it is clear that context which consists of two subfactors of *learners and educational setting* largely dictates the course goals. No matter what and how syllabuses are categorized, a single teaching approach or methodology may not be able to fulfill learners’ particular goals of language learning. Hence, they should not be mutually exclusive. Integration of syllabuses is usually recommended for a more effective result. McDonough and Shaw (2003) and Ur (2005) argue that, increasingly, there has been a current approach to syllabus, known as “multi-syllabus” or “multi-strand” syllabus. It is a combination of two or more syllabus types as the name suggests that are interwoven into syllabus contents. A good example of this can be seen on the content page of commercial coursebooks, it always reflects its underlying principle syllabus like topics, functions, skills, language focus and/or phonology. This clearly demonstrates that course developers
have already realized the potential use of the multi-syllabus. Consequently, the syllabus content has direct implications on the materials design and selection.

As noted earlier in 1.2.1 and 1.2.2, language goals and objectives for IT programme aims to develop IT students’ second language competence as well as IT knowledge. Obviously, these two goals are central to the underlying principles of the theme-based model. Accordingly, in this present study, the developed materials, which are in the form of a series of tasks will characterize CBI materials in the theme-based model. In order to systematically develop any new language materials, it would be necessary to carefully take such issues as the process of actual materials/task construction, task grading and sequencing into account.

### 2.2.3 Process of materials design

The syllabus content provides general statements of what to be taught and learned. Here, the question will be ‘what potential sources can be used to facilitate the learners in the desired directions?’ It is not very easy to find the language learning publications perfectly fitted to the particular course. Mostly, the published course materials fall somewhere between the extremes of totally relevant and totally irrelevant, particularly in the content-based course. Inevitably, the teacher is impelled to carefully design his/her own materials to suitably cater for the course goals as well as the learners’ needs. Jolly and Bolitho (2001) suggest a dynamic process of materials writing as illustrated in Figure 2.3.

![Figure 2.3 Steps in materials design](image-url)

Figure 2.3 Steps in materials design
At Stage 1, the teacher becomes aware of a specific need for language materials that are consistent with the course syllabus and the learners’ needs. If the thematic syllabus is the case, at Stage 2, the teacher may have to identify language functions, skills or genuine discourses necessary for the particular thematic unit. Students of IT programme, for instance, are required to give verbal/written warnings of the computer virus programme. They may have to know and be able to use some useful gambits for giving advice like ‘Do (don’t) …’, ‘You should or must not …’ or ‘It is better not to …’. For CBI classroom, the materials that are outside the students’ field of study are deemed decontextualized. On the other hand, at Stage 3, the preferred practice in the language class for IT students is to integrate materials used in IT content course as a source for language learning. Stage 4 involves evaluation of classroom method to see whether the materials are intended to provide meaningful practice.

Production of materials at Stage 5 refers to the physical appearance of the materials, which involves considerations of layout, visuals or text length etc. Subsequently, developed materials are used in the actual classroom. Finally, to determine the effectiveness of the developed materials, it requires the act of evaluation. The results of the evaluation will yield the information whether the materials need to be rewritten or adjusted to meet the intended course goals as well as to accommodate students’ learning goals. So far, it should be noted that these materials writing steps are not in hierarchical order in which the writer has to precisely move from Stage 1 to 7. Rather, it is a useful guideline, which most of the materials writers commonly practice. It is possible that the evaluation of the materials can be carried out immediately after the completion of the materials production without its use in the actual classroom. Similarly, the results of the materials evaluation can reflect the information of any stages of the writing process.

2.2.4 Grading tasks

There has been a growing interest in the pedagogical task due to its valuable contributions to language learning. It is viewed as one of the major aspects of classroom implementation that can stimulate the process of language learning and
determine the learning achievement of the learner. It is, thus, necessary to have a better understanding of the overall concept of the task.

Educators have defined language task in different ways. Richard et al (1986:289) define a task as

… an activity or action which is carried out as the result of processing or understanding language (i.e. as a response). For example, drawing a map while listening to a tape, listening to an instruction and performing a command may be referred to as tasks. Tasks may or may not involve the production of language. A task usually requires the teacher to specify what will be regarded as successful completion of the task. The use of a variety of different kinds of tasks in language teaching is said to make language teaching more communicative… since it provides a purpose for a classroom activity, which goes beyond the practice of language for its own sake.

This definition refers to a language task as any verbal and non-verbal activity that learners undertake in the classroom setting and that can contribute to the eventual language use rather than understanding of language system.

Similarly, Ellis (2003:16) refers to the language task in the following way:

A task is a work plan that requires learners to process language pragmatically in order to achieve an outcome that can be evaluated in terms of whether the correct or appropriate propositional content has been conveyed. To this end, it requires them to give primary attention to meaning and to make use of their own linguistic resources, although the design of the task may predispose them to choose particular forms. A task is intended to result in language use that bears a resemblance, direct or indirect, to the way language is used in the real world. Like other language activities, a task can engage productive of receptive, and oral or written skills and also various cognitive processes.

Primarily, a task should be able to successfully prepare the students to effectively use linguistic knowledge, language skills or any communicative strategies in their target situations. Breen (1987:23) offers another definition of the pedagogical task:
any structured language learning endeavor which has a particular objective, appropriate content, a specified working procedure, and a range of outcomes for those who undertake the task. ‘Task’ is therefore assumed to refer to a range of work plans which have the overall purposes of facilitating language learning from the simple and brief exercise type, to more complex and lengthy activities such as group problem-solving or simulations and decision-making.

In this definition, task refers to any well-planned activity that should have a clear goal, language input, procedure and an expected outcome. Moreover, it should be sequenced in a manner that cognitive and linguistic demands should be gradually increased.

Based on the perspectives presented above, it can be summarized that language task can be any types of language activity which is able to facilitate the development of language ability for communicative purposes. Substantially, those activities should be systematically organized in such a way that students can eventually cope with progressively complex and lengthy activities.

Grading the task complexity is a complicated and difficult business. It involves various components of language learning tasks such as learners’ background, topic familiarity or types of activity experienced by the learners and so on. Nunan (2001) determines the complexity of a task in relation to input, learner and activity factors.

A) Input factors

Nunan states that the complexity of the text will be affected by grammatical complexity. A text consisting of simple sentences will generally be considered easier than one that contains non-finite verb phrase and subordination. For example a sentence such as “The boy went home.” will be immediately recognized as less complex than one like “Having insufficient money, the boy, who wanted to go to the cinema, went home instead.” Additionally, its length, the propositional density and the amount of less frequently used vocabulary, the explicitness of the information and the amount of support in the form of pictographic representation such as photographs, drawings, tables or graphs that will have an effect on its level of difficulty. Brown and Yule (1983 cited from Nunan 2001) suggest that the genre of text is another feature in determining difficulty. The
level of difficulty ranked in ascending order can be arranged in the following manner: descriptions, instructions, stories, abstract discussions, or the expression of opinions and attitudes respectively. Generally, it is accepted that abstract topics are considered more complicated than concrete ones, factor such as topic familiarity also need to be taken into account as Nunan finally argues that

In considering topic, it is generally assumed that abstract topics, such as “redundancy” will pose greater problems for the reader than concrete topics, such as “speed”. However, the extent of such problems will depend on the extent of the learner’s background knowledge of the topic in question. It may well be that an unfamiliar concrete topic will pose greater problems than a familiar abstract topic (Nunan, 2001: 101).

Another crucial issue the teacher should pay attention to is the learner. This raises a question of what aspects of the learner factors need to be taken into account in order to determine the task complexity. The focus of the discussion now shifts to the learner factors.

B) Learner factors

Learners are different in numerous ways: aptitude, attitude, linguistic and cognitive proficiency, learning style and background knowledge. Ur (2005) discusses learner differences in terms of motivation, interest, age and the level of language ability. In Nunan’s book ‘Designing Tasks for the Communicative Classroom’, He (op.cit.) argues that input and learner factors cannot be considered in isolation. He emphasizes that lack of appropriate background knowledge is a more significant factor in the ability of second language learners to comprehend school texts than linguistic complexity as measured by various readability formulae. This assumption has its root in the Schema theory, which has strongly influenced research and teaching involving reading skills. McDonough and Shaw (2003) explain that the term was first used by Bartlett in 1932. In reading comprehension, it refers to the process of how previous knowledge and experience that learners already have, can be incorporated to new information in the texts. For example, if learners are going to read a text related to a situation at a subway station, persons who have lived in a metropolitan and have an experience of travelling by subway
train will interpret the reading based on the existing knowledge and experience and integrate what they have already known with the content of what they are reading. These learners may find the reading relative easy and comprehensible. On the other hand, ones who never have any relevant experience will rate the reading as higher-level complexity.

Additionally, other learners’ characteristics viz. confidence, motivation, prior learning experience, learning pace, observed ability in language skills and cultural knowledge/awareness also have great effects on determining task difficulty (Brindley (1987 cited in Nunan, 2001). However, it will be too complicated to take all of those factors into consideration simultaneously. The teacher may pick up some factors that are most likely to be of relevance to the teaching context.

C) Activity factors

It is quite clear that in determining the task complexity, input factors will have to be considered in relation to learner factors. While input factors are decided by their explicit nature such as linguistic complexity, length, its graphic support or genre, learner factors are considered in terms of background knowledge and some aspects of individual differences, the activity referring to specific input, will generally be determined by the cognitive operations or demands made upon the learners. Below is an example of three principal activity types proposed by Prabhu and employed in Bangalore Project, which involve varying degrees of cognitive loads.

i) Information gap activity: it involves a transfer of given information from one person to another, from one form to another or from one place to another. Generally, students work in pairs. Each of them will have a part of information. They are required to convey it verbally to the other.

ii) Reasoning gap activity: it involves deriving some new information from given information through processes of inference, deduction, practical reasoning, or a perception of relationships or patterns. The distinction between these two activities is that the former is only to transfer the same information to another form or to complete the missing information of the other part while the latter
emphasizes on reaching the conclusion or agreement based on the available information.

iii) Opinion gap activity: it deals with identifying and articulating a personal preference, feeling, or attitude towards the given topic or situation. For instance, students may be asked to discuss the topic of climate change or global warming and come up with a series of possible solutions.

These types of activity demand varying degree of cognitive operations from learners. In the information gap, learners are supposed to merely deal with the surface information of the text while in the second one, they have to go beyond its surface and think more critically based on the given information. The opinion gap activity seems to demand higher cognitive skills from the learners. They may have to utilize a wide range of background knowledge of the world or subject matter to think critically and logically to articulate their opinions or justify the arguments.

To sum up, task gradation involves numerous variables associated with input, learner and activity factors. There is no absolute formula to determine task difficulty. It is practical for the teacher to develop his/her own criteria particularly in relation to the learners’ factors for grading content and linguistic complexity. Doing this can make the materials learner-centred. The decision on ‘what is easier’ or ‘what is more complex’ will have a direct effect on task arrangement. In the next section, it will be appropriate to discuss the sequence of tasks.

2.2.5 Sequencing tasks

Sequencing tasks refers to the systematic arrangement of language activities. They can be sequenced in a number of different ways. Essentially, the goals or objectives of language learning will dictate the orientation of task organization. A language course, which aims to promote learner’s autonomy may structure language tasks in such a manner that the demand placed on learners gradually increase until they become independent and can take full responsibility for their own learning.
A Communicative Language Teaching (CLT) class that pays attention to the combination of functional as well as structural aspects of language, a range of tasks may be framed as pre-communicative and communicative tasks. Initially, learners have opportunities to practice separately specific elements of language knowledge or skills (for instance, pronunciation, grammar or vocabulary) required for communicative ability. Subsequently, they will integrate those knowledge and skills to effectively communicate meanings. Littlewood (2002) argues that it is also possible to reverse this sequence. Alternatively, the teacher may begin a teaching unit with a communicative activity such as a role-play based on a situation, which the learners might expect to encounter. Then it can be followed by a set of functional grammar exercises essential for the given situation.

In addition to the arrangement determined by the teaching goals and objectives or methodology, language tasks can be coherently sequenced in terms of degree of linguistic complexity and cognitive demands made upon learners or types of the students’ response. A more detail discussion on the task sequencing is now undertaken.

McDonough and Shaw (2003) state that, in an extensive listening session, the range of selected activities would essentially depend upon proficiency. At lower levels, learners are initially required to respond in non-verbal forms. These types of responses may include arranging pictures in a correct sequence, following directions on a map, checking off items in a photograph or completing a grid, timetable, or chart of information. When the learners’ proficiency develops, tasks will gradually become more language based. Learners are, eventually required to construct its meaning for themselves, to make inferences and interpret attitudes as well as to understand explicitly stated facts. For instance, this may include answering true/false or multiple-choice questions, predicting what comes next (preceded by a pause), constructing a coherent set of notes or inferring opinions across a whole text. Similarly, Ur (2005) also classifies types of listening activities in terms of complexity of response demanded on the learner, which can be applied as a means of sequencing tasks. She proposes four types of response to listening activity as follows:
1. No overt response: learners may not have to do anything in response to the listening, however non-linguistic or physical responses like facial expression will be the evidence to demonstrate whether they are participating or learning anything from the activities. Such activities may include songs, jokes/stories telling, or watching films or video. If the content is well chosen and is truly entertaining, learners are likely to be motivated to attend and make the effort to understand to enjoy them.

2. Short response: A little higher demand is required from the learners. They may be asked to follow instructions, tick off words/components relevant to what they are listening or give a short answer orally. In this type, Ur suggests activities such as obeying instructions, ticking off items, true/false, detecting mistakes, cloze passage and guessing definitions are crucial.

3. Longer response: at this level, the types of activities can be answering questions orally or in writing, brief notes from a short lecture or talk, filling long gaps of what they think might be missing, paraphrasing in the same language, translating in another language or summarizing the listening text.

4. Extended response: Here, it is the so-called a “jump-off point activity. It is an integrated-skill activity. Learners may be required to actively engage in problem-solving activities. They have to discuss to come up with a series of suggested solutions. Another example is interpretation in which listeners try to guess from the words, kinds of voices, tone and any other evidence what is going on.

In addition to the view outlined above, Candlin (1987) also suggests that task complexity can be determined on the grounds of the mental operations. This includes

- Cognitive load: It refers to the situation where there is a gradual increase in cognitive complexity without dramatically raising the communicative load.

- Communicative stress: This aspect involves learners’ background knowledge of the issues being discussed and the way learners perceive the interlocutor competence.
• Particularity and generalizability: Task complexity is determined by the extent to which the tasks follow some generalized pattern or stereotyped pattern.

• Code complexity and interpretive density: With textually elaborate texts, students may be required to answer straightforward question. On the other hand, with textually simple texts, the types of the question posed to the students may require the critically interpretive and explanatory analysis.

• Content continuity: It entails the degree of task authenticity. In other words, the task difficulty is determined in terms of the extent to which the content relates to the real-world interests or needs of the learners.

• Process continuity: Learners clearly know that particular tasks need coherently prerequisite skills and adequate knowledge of content. Learners are encouraged to sequence their own learning orders and to construct their own continuity.

As outlined above, it could be said that task sequencing can be done in terms of teaching goals and objectives, task type, linguistic complexity and cognitive demand or types of response etc. The decision for task sequencing may be considered in conjunction with the learners’ characteristics viz. language proficiency or preferred learning situation. If language proficiency is the case, at the initial stage of learning students may not be able to response verbally or in a written form. Students may have to response non-verbally. Alternatively, in the case of learning preference, students may prefer to engage in the communicative tasks rather than linguistic focus. Though it is important to deal with some linguistic aspects, the teacher may have to first introduce communicative tasks in order to draw students’ attention. It is, therefore, crucial to take account of learners’ factors when sequencing tasks.

In conclusion, in order to develop second language materials, it is necessary that materials developers should first have a thorough idea of what ‘good’ second language materials are. For content and language integration materials, developing communicative competence should not be the only goal of the language learning. The integration of content raises the significance of the cognitive ability. Therefore, it is recommended that intellectually challenging should be an additional
quality embraced in the materials. In other words, students should have opportunities to develop their cognitive ability through higher order thinking tasks. Additionally, some other accounts like teaching/learning contexts and language syllabus, conceptualizing content, grading task difficulty also have to be considered in relation to inputs, learners and activities. This will significantly exert an influence on the selection of inputs and activities.

Review of different aspects of language materials provides a comprehensive view of how to develop the materials suitably for the particular teacher/learners’ context. It, however, may not be able to claim a complete cycle of materials development without the evaluation process. The next section will discuss different issues on materials evaluation.

2.3 Materials Evaluation

Ellis (1997) distinguishes two major types of materials evaluation as predictive and retrospective evaluations. He argues that the former basically aims at determining what materials to be potentially used. It addresses information on overall ‘appropriacy’ of the materials. The latter is designed to investigate a specific teaching task in the actual classroom. This type of evaluation will yield information that can be used to determine whether it is worthwhile using it again and what can be modified to maximize students’ learning. Greater details of materials evaluation are given below.

2.3.1 Predictive evaluation

Generally, two major reasons for language teachers to get involved in materials evaluation is either to select published ELT materials or to evaluate the effectiveness of the home-produced materials. This raises an important issue of how the materials can be systematically scrutinized. Prior to a careful examination, teachers may have to set out their own criteria. Below are some points of view that teachers make regarding teachers and learners’ needs in their contexts.

I teach in a college where most of my students are adults. They join evening class after their regular workday. They want me to guide them how to write a technical report and make a presentation. I think I should also help them with pronunciation practice.
My students are very academic. They want the materials that could help them develop daily communication skills as well as learn some new information of agricultural technology.

It is clear that these two teachers are dealing with different teaching situations and groups of learners whose specific needs and interests are different. This is, therefore, highly influential in formulating the evaluation criteria for selection of any published materials. It is not always easy to establish rigorous criteria to examine the suitability of materials.

Regarding various types of published materials, ELT educators propose practical considerations to judge the usefulness and suitability of materials. Breen and Candlin (1987) suggest a guide to explore ELT materials for classroom use into two phases. Phase I involves posing initial questions in relation to (1) aims and content of the materials, (2) demands upon learners’ performance, (3) demands on teachers’ contribution and (4) its function as a classroom resource. Subsequently, Phase II deals with more specific questions to assist teachers in elaborately analyzing such issues as learners’ needs and interests, approaches to language learning and the teaching/learning process in actual classroom situation.

Dougill (1987) also proposes a list of different factors for materials reviewer to keep in mind. It comprises six major aspects that are further divided into numerous sub-issues as below:

1. Target group: age-range type of students, presumptions, aims and purposes of the materials
2. Framework: syllabus, progression, revision and recycling, skills and cohesion
3. Units: length of unit, presentation, practice, variety and regularity, and clarity of purpose
4. Subject matter: interest and culture
5. Form: visual appeal, motivating and illustrations
6. Course components: cassette, teacher’s book tests, laboratory drills and workbooks
Apparently, these two perspectives primarily attempt to analyze crucial aspects of the materials in order to accept or reject them. The fact that teachers are in search of materials responsive to their learners’ needs and their teaching contexts necessitates teachers to specify their own criteria in a way that they can easily compare different sets of results of materials analysis. Hutchinson and Waters (2002) divide the evaluation process into four major steps, namely, defining criteria, subjective analysis, objective analysis and matching which are illustrated as in the following diagram.

![Diagram of Materials Evaluation Process]

**Figure 2.4 Materials evaluation process**

They propose some possible criteria viz. audience, aims of the course/materials, content, methodology and other aspects as price range and materials availability. Nevertheless, teachers may add any other criteria that they find important. Subsequently, those aspects are subjectively and objectively judged with reference to the predetermined criteria. Finally, findings of the two analyses are compared for making decision.

There is a growing interest in ESP materials. Nonetheless, very little seems to have been done in the area for evaluation of published ESP textbooks. Dudley-Evans and Bates (1987) put forth two principal reasons for this. First, uncertain economics of publishing ESP textbooks make the revision of the materials very unattractive to the publishing company and second is the difficulty to collect the regular feedback on materials from ESP situations spread out over the world. Pilbeam (1987) proposes some criteria that can be used to examine any published or unpublished ESP materials in the form of questions such as:

1. Is it specific? It is crucial that the materials should represent the learner’s needs and objectives.
2. Is it appropriate? It concerns itself with learner’s language ability, background knowledge and culture.

3. Is it valid? This issue is partially related to appropriacy. It involves the matter of face validity. Materials should be written and used for particular group of learners and at the same time should mirror and reflect the world of that group.

4. Is it flexible? Frequently, many ESP courses involve varying intensive sessions of one week to six months. Materials, therefore, could be adapted and utilized in a flexible way to fit into the specific time constraints.

5. Is the approach suitable? Regarding teaching and learning styles, the essential considerations here are that teacher feels happy with the approach taken by the material and that it can match the learner’s preferred learning style.

6. Is the material of high quality? This refers to the consideration of a variety of exercise types included in the materials.

7. How long does it take to produce? In addition, what is the cost of producing material? These tend to directly relate to time consumption for materials writing.

McDonough and Shaw (2003) suggest two stages of materials evaluation: external and internal evaluations. The former involves examination of the cover of the book, its introduction and the table of contents. Basically, the blurb offers the overview of how the materials have been organized and the introduction and its table of contents represent the reasons and objectives of the materials and what is actually presented inside. Teachers can generally expect such kinds of information as the intended audience, the proficiency level, the context that the materials are to be used, the way the language has been organized and the author’s views on language and methodology. Once the materials prove potentially appropriate, the teachers can proceed with a more detailed investigation in the next step- the internal evaluation. At this stage, they state that it is reasonable to examine two or more units on some features as the presentation of the skills in the materials, grading and sequencing, the relationship of test and exercise, its suitability for different learning styles and enhancement of teacher and learner’s motivation.
In addition, Lazar (2008) proposes three types of materials evaluation sheets:

1. The ‘quickie’ book evaluation sheet: It contains several points for considerations as title, author, publisher, level, overall aims, types of text, skill/language area to improve, strengths and weakness of the material and suitability for the learners. This type of evaluation can be used when teachers have to rapidly examine a book or number of books.

2. The detailed book evaluation sheet: For more insightful information of the materials, the sheet contains significant features viz. aims and organization, types of texts and activities, instructions and layout, accompanying resources and suitability for class/group. Materials evaluators are required to answer a set of questions under each category.

3. A piece of material evaluation sheet: It is a four-point scale ranging from poor to excellent on the suitability of approach and level for the students, relevance and interest of texts, variety and appropriateness of tasks and activities, opportunities for participation and personalization, linguistic guidance, cultural/literary/historical background, clarity of instructions, and layout and design.

Apparently, educators provide different criteria for materials evaluation. The assessment of coursebook is fundamentally a subjective, rule-of-thumb activity, and that no neat formula, grid or system will ever provide a definite yardstick (Sheldon, 1988). This is most probably because teachers work in different settings with different groups of students who have different learning goals and objectives. Nevertheless, it is found that those criteria share some common aspects viz. the aims of the materials, suitability of teaching approach and students’ ability and a variety of activity types. For CBI tasks, the integration of content raises some issues to be evaluated, that is, the content authenticity, suitability of content for language learning and task coherence.

It is essential to carry out predictive evaluation because it provides concrete information for teachers to determine whether particular materials should be selected and used in their teaching contexts. However, it is important to note that the effectiveness of the materials could not exclusively rely on the results of
predictive evaluation. Potentially, retrospective evaluation can provide in-depth information about materials.

2.3.2 Retrospective evaluation

While predictive evaluation is an attempt to select materials that will be relevant and best appropriate for particular group of the students, retrospective evaluation is concerned with investigating the effectiveness of language tasks in the actual classroom. Specifically, this type of evaluation is carried out to determine the extent to which the task has reached its objectives or to discover how it can be improved in order to maximize students’ learning. Ellis (2008) distinguishes two broad levels of materials evaluation: a *macro-evaluation*, an overall assessment of the entire set of materials, and a *micro-evaluation*, a particular teaching task specially selected to examine the actual outcomes as a result of its implementation in the classroom. As the some of the study is to seek the effectiveness of some interesting task, this section will focus only on micro-evaluation. Conducting a micro-evaluation of a task involves a series of steps: describing the task, planning the evaluation, collecting the information for the evaluation, analyzing information and reaching conclusions and making recommendations.

**Step 1: Describing the task**

At this stage, a clear description of a task is required. It can be described in the following aspects.

- **Input** refers to the information provided for the students are to work on. Input can be in the verbal form i.e. a series of directions or non-verbal i.e. a diagram or a picture.
- **Procedures** are concerned with steps or directions students need to perform to accomplish the task,
- **Language activity** involves students’ engagement in receptive or productive language activities or both.
- **Outcomes** are what the students achieve on the completion of the task. The outcomes can be in the verbal or non-verbal forms.
Step II: Planning the evaluation

It involves answering a number of questions concerning the approach of the evaluation, purpose, focus, scope, evaluator, timing and type of information (See Table 2.4 for a checklist of questions for evaluating a task). It is important to note that the questions posed at this stage should not be seen as mutually exclusive. In the case of its approach, it is possible to carry out both an objective and development models. Similarly for timing, the evaluation can be undertaken pre-, during and post tasks. The planning of the evaluation may have a positive effect on the planning of the lesson. These two actions should be carried out concurrently.

<table>
<thead>
<tr>
<th>Dimension</th>
<th>Key questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Approach</td>
<td>a. Is the task evaluated to determine whether it has achieved its goals&lt;br&gt;b. Is the task evaluated to discover how it can be improved</td>
</tr>
<tr>
<td>Purpose</td>
<td>a. Is the evaluation aiming at determining whether the task “works”?&lt;br&gt;b. Is the evaluation aiming at improving the task for future use?</td>
</tr>
<tr>
<td>Focus</td>
<td>Is the focus of the evaluation on the effectiveness or the efficiency of the task? If the focus is on the efficiency of the task with what is the task to be compared?</td>
</tr>
<tr>
<td>Scope</td>
<td>a. Will the evaluation of the task be in terms of its stated objectives? Will it consider the appropriateness of the objectives themselves?&lt;br&gt;b. Will the evaluation of the task consider predicted benefits or will it also consider unpredicted benefits as well?</td>
</tr>
<tr>
<td>Evaluators</td>
<td>Who will evaluate the task?&lt;br&gt;a. the teacher&lt;br&gt;b. another teacher</td>
</tr>
<tr>
<td>Timing</td>
<td>When will the evaluation take place?&lt;br&gt;a. during it is being used&lt;br&gt;b. on its completion</td>
</tr>
<tr>
<td>Type of information</td>
<td>a. What kinds of information will be used to evaluate the task?&lt;br&gt;b. How will the information be collected?</td>
</tr>
</tbody>
</table>

Table 2.4 A checklist of questions for evaluating a task

Step III: Collecting the information

Here three types of information are sought: (1) information about how the task was performed, (2) information about what learning took place as a result of performing the task and (3) information regarding the teacher’s and the students’
opinions about the task. Ellis (2008) suggests that these types of information can be gathered by means of documentary information (i.e. syllabuses and materials), test scores (i.e. pre- and post tests), observation of the actual classroom and self-report made by the teacher and the students.

Step IV: Analyzing the information

It entails two ways of analyzing information: quantitative analysis or qualitative analysis. The former involves quantification of information. It is, for instance, potential to develop a checklist or scale for rating certain aspects of the teaching task in which the results will be demonstrated in the form of tables or numerical data. The latter subscribes to an impressionistic approach, which embraces a narrative description of the information. It can be illustrated by quotations or a sample of responses to open-ended questions in relation to the teaching task. It is recommended that combination of the two types of analysis is preferable because they can be used to strongly support each other.

Step V: Reaching conclusions and making recommendations

Ellis makes a clear distinction between ‘conclusions’ and ‘recommendations’. Conclusions refer to the general statements about what has been discovered as a result of the analysis of the performed task. Conclusions have to be framed in association with the purposes of evaluation. Thus, in an objective model evaluation, conclusions need to state to what extent the result of task performance can achieve goals. On the other hand, in a development model evaluation, conclusions will demonstrate what aspects of the task successfully or unsuccessfully have been implemented. Recommendations are the evaluation’s points of view regarding to future actions. They may include such issues as whether the task should be used again or thrown away or what kinds of modification should be made to improve the quality of the teaching task. It is possible that the reader/user will agree with the conclusions but disagree with the recommendations.

Evaluation of the task effectiveness in the classroom situation can yield thorough information of the particular task concerning input, procedures, language activity and outcomes. Planning for task evaluation requires the teacher to carefully consider issues such as an evaluation approach, purpose, focus scope, evaluators, timing and types of the tool for gathering information. Generally, this type of task
evaluation aims to address three major questions: how the task is performed, what learning takes place and what the teacher and learners feel about the task. This information can help the teacher to determine how the tasks can be improved.

To sum up, it is found necessary to conduct both types of evaluation, predictive and retrospective, in order to seek the effectiveness of the language materials. They yield different types of information. For the purpose of materials selection, the predictive evaluation will help teachers to determine which materials are suitable for their teaching contexts in terms of learning goals and objectives, teaching approach, activity type and students’ ability etc. It is also essential to keep in mind that the evaluation criteria should take both objective and subjective needs into account. Equally important, the retrospective evaluation illustrates the effectiveness of the chosen materials in the classroom situation. It potentially provides information such as how students benefit from the materials, whether it is responsive to the students’ needs or what to be modified to maximize their learning etc. Ideally, students should be included in both types of the evaluation process. Students’ contribution can make them sensitized to their active role in the learning process. Consequently, it may significantly influence their learning behaviours.

2.4 Additional considerations for materials construction

The previous sections delineated CBI teaching prototypes, theoretical framework of materials construction and evaluation. This section addresses some additional considerations: LCA and CLT approaches as well as the significance of scaffoldings in CBI tasks. Subsequently, a framework for CBI materials construction is discussed.

2.4.1 Two related approaches for materials construction

Review of literature concerning the notion of CBI and theoretical framework of the materials development greatly exerts influence on the direction for the language materials construction of the present study. The developed materials should not be seen as a product of a single structured school of thought. The intention of making language learning meaningful to students and responsive to students’ needs and interests and of allowing students to take an active and participatory role in the learning process, some salient aspects of LCA, CLT and
the significance of scaffoldings are taken into account for the newly developed materials in this present study. The underlying principles of these approaches are discussed below.

A) Learner-Centred Approach

Psychological theory of language learning makes a great contribution to a comprehensive understanding of how language is taught and learned. Traditional language teaching like Audiolingual method developed by American linguists in the 1950s, is seen as the product of the behavioral view of psychology. Mastery of linguistic elements through the process of stimulus-response or habit formation constitutes its backbone. However, its inadequate consideration to psychological and affective factors leads to paradigm shift of language learning. From the psychological perspective of humanism, greater attention to the learner as a ‘whole person’ has been realized. As a result, some of the teaching methods are developed. This may probably include Curran’s Community Language Learning (CLL), Asher’s Total Physical Response, Gattegno’s Silent Way and Lozanov’s Suggestopedia (Tudor, 1996). In a CLL class, no predetermined syllabus is designed. Students as members of a community are encouraged to generate any topic for discussion, address questions or formulate any sentences either in their mother tongue or in the target language with a supportive and non-judgmental atmosphere that can establish open and trusting relations among class members. In part, this humanistic movement can be seen as the onset of learner-centredness.

American Psychology Association (1997) develops fourteen psychological principles of LCA that can directly contribute to the teaching and learning improvement. These principles are categorized into four major domains and should not be considered in isolation.

i) Cognitive and metacognitive factors

- It requires active learning for effectively constructing meaning from information and experience. Hence, students need to be active, goal-directed, self-regulating, and assume personal responsibility for contributing to their own learning.
• Students need to possess a clear learning goal and be able to pursue it.
• Students’ knowledge can be widened and deepened when they are able to link new piece of information with the existing knowledge.
• Students can use a variety of thinking and reasoning strategies to achieve their own learning goals.
• Students can reflect on how they think and learn, select potential learning strategies and methods, and monitor their own progress.
• Effective learning can take place when learning contexts are appropriate to students’ prior knowledge, cognitive abilities and their learning and thinking strategies.

ii) Motivational and affective factors
• Motivational and affective factors viz. emotional states, beliefs, interests and goals, and habits of thinking are greatly influenced the quality of thinking and information processing and the students’ learning motivation. Positive emotions such as curiosity and mild anxiety can effectively facilitate learning and performance.
• Intrinsic motivation to learn can be enhanced when the task is perceived to be interesting, relevant and meaningful, appropriate in complexity and difficulty to the students’ abilities.
• Effort is another major indicator of learning motivation. The student invests considerable energy along with persistence over time without coercion when the task is interesting and personally relevant.

iii) Developmental and social factors
• The student effectively learns when language materials are appropriate to their developmental level and are presented in an enjoyable and interesting way.
• Interactive and collaborative instructional contexts provide an opportunity for perspective taking and reflective thinking that may lead to higher levels of cognitive and social development as well as self-esteem.
iv) Individual differences

- Students possess different learning preferences, strategies, approaches and capabilities. Appropriate incorporation of varying instructional techniques and materials can be beneficial to students’ optimal learning.

- Careful consideration of students’ linguistic background, beliefs, race and socioeconomic status can largely enhance the possibility for designing and providing positive learning contexts that may lead to learning achievement.

- Various kinds of assessment, ongoing and outcome assessments as well as the students’ self-assessment, are integral parts of the learning process.

Regarding the four domains of psychological principles stated above, LCA materials should enable students to cognitively engage in the learning activity in order to construct meaning and reflect their own learning. Moreover, to guarantee a successful result, it needs to take motivational and affective, developmental and social factors as well as individual differences into accounts. That is, materials should be appropriate in complexity and difficulty to students’ learning ability, effectively capture their attention, promote opportunity for social interaction and development as well as incorporate a variety of teaching techniques in order to accommodate their learning preferences.

B) Communicative Language Teaching

As a result, of the increasing discontent with the widespread structural viewpoint and an attempt to be responsive to students’ real-world communication needs, Communicative Language Teaching (CLT) was developed by European Council in the mid-1960s (Tudor, 1960). The central theoretical concept in CLT is the ‘Communicative Competence’. The term is first introduced by Hymes (1972 cited in Richards and Rodgers (2002). In Hymes’s view, a person who possesses communicative competence requires both knowledge and ability of language use. To clearly comprehend the term, Richards (2011) distinguishes between grammatical competence and communicative competence. He argues that grammatical competence refers to the knowledge of linguistic system e.g. parts of speech, tenses, phrases, clauses or sentence formation. This type of knowledge
mastery is not able to guarantee effective use of language for meaningful communication. To him, communicative competence includes the ability to use language for different purposes and functions, to vary the use of language according to the settings and participants, to produce and understand different types of texts as well as to maintain communication despite having language limitations. Richards and Rogers (op.cit.) provide the underlying CLT principles as follows:

i) Language is a system for the expression of meaning.

ii) The primary function of language is to allow interaction and communication.

iii) The structure of language reflects its functional and communicative uses.

iv) The primary units of language are not merely its grammatical and structural features, but categories of functional and communicative meaning as exemplified in discourse.

It can be said that effective language users are required to possess two crucial qualities: mastery of the linguistic knowledge and the ability to use this knowledge. Littlewood (2002) proposes two major types of CLT activities: pre-communicative and communicative activities. The first type aims to provide students with opportunities to practice linguistic elements separately in the structural activities. The teacher can create a links between language forms and their functional meaning. He terms this type of activity as ‘quasi-communicative’ because it involves both structural and functional aspects of language as opposed to the only mechanical drill activity. The second of activity consists of two subcategories, depending on the degree of emphasis: social or functional meaning. In the functional communication activity, students have to perform a task by communicating as best as they can within available resources for sharing and processing information. To perform a social interaction activity, students have to pay greater attention beyond functional meanings. It takes account of the social context. Students, therefore, not only simply get meaning across but are able to communicatively use language in a socially-accepted manner. Given below is the diagram of CLT activities.
Four main types of activity found in CLT contain fluency vs. accuracy activities, mechanical, meaningful and communicative practice, information gap activities and jigsaw activities (Richards, op.cit.) In addition, other activity types in CLT also include information gathering activities, opinion-sharing activities, information-transfer activities, reasoning gap activities, role-plays and pair and group works.

Clearly, the above discussion provides the better understanding of the language goal and activity type within the CLT framework. It is found that its overarching goal is to find ways of developing students’ communicative competence, which refers to the ability to successfully use language for functional and social interaction purposes as opposed to the traditional approach focusing on linguistic knowledge. This entails teachers and materials’ writers to develop classroom activities that effectively enhance the students’ communicative ability. Moreover, it is also found that CLT takes account of social interaction. The students should be able to appropriately communicate in a specific situation and relationship. This may imply that the students should also acquire a certain degree of the grammatical competence. Accordingly, mechanical practice in remains an integral part of CLT materials.

In conclusion, the theoretical consideration of LCA provides a comprehensive view of how psychological factors significantly exert the influence on the students’ language learning and of some conditions that need to be met in order to be responsive to the students’ subjective and objective needs. Similarly, CLT theoretical framework allows a better understanding of language learning goal and what is entailed in achieving communicative competence. In other words, it suggests types of classroom activity that positively affect the quality of classroom
process and language use. The present study, therefore, takes some kinds of psychological aspects in LCA and some underlying principles of CLT activity into account in order to construct CBI language materials for IT students.

C) Significance of scaffolding in CBI tasks

Dealing with new course content where the texts are extensively published in English, students may encounter frustration and develop anxiety because of its difficulty and complexity. To address this, the language teacher can probably provide some scaffolding to ease text difficulty. Studies on scaffolding show that wide variety of scaffoldings can facilitate the students’ learning. This may include technological tools and visualization (Metiri group, 2009), interactive essays, recommended documents and student guides (Brush & Saye, 2002), graphic organizer (Huggins & Edwards, 2011), one-to-one teaching (McMahon, 2001), breaking content into smaller components and providing formative feedback (Skene & Fedko, 2011, McDevitt & Ormrod, 2002, Berk, 2002, Eggen & Kauchak, 1999 and Krause et al, 2003) or providing examples and questioning (Eggen &Kauchak, 1999). It is, therefore, worth having some background ideas about some characteristics of scaffolding and types of scaffolding that can be effectively used in a content-based language classroom.

Scaffolding instruction originates from Vygotsky’s sociocultural theory and his concept of zone of proximal development (ZPD). ZPD is defined as the distance between what a child can perform with the help of more competent others and what s/he can perform independently. Gillmore and Tharp (1993) indicate four stages of progression in the ZPD as in Figure 2.6.
In Stage I, a child may have limited understanding of the situation. Necessarily prior to performing tasks independently, s/he needs some guidance from the more competent others, who can be his/her parents, a teacher, an expert, peers or a coach, to accomplish tasks. The child can respond at this stage can be following directions or imitation. Naturally, through interaction, a child develops more understanding of how to perform tasks. S/he gradually moves to Stage II and can carry out tasks without any assistance from others. Here, Gillmore and Tharp emphasize that this does not mean that task performance is fully developed or automatized. At Stage III, a child grows out of ZPD and task performance is well developed and become automatized and fossilized. Guidance from others becomes disruptive and irritating. Vygotsky describes task performance at this stage as the ‘fruits’ of development. That is, performance is no longer developing: it is already developed. Stage IV, in the condition of lifelong learning, individual is always in the ZPD sequences. S/he has already developed some types of ability but might remain in ZPD for the development of other types of capacity.

In the teaching context, a teacher usually provides scaffolds or supports to facilitate students’ development. McKenzie (1999) describes eight characteristics of scaffolding in his article on Scaffolding for Success as follows.

i) Scaffolding provides clear directions. A comprehensible step-by-step instruction is essential to minimize the students’ confusion and to give the students guidelines of what to be accomplished to reach the task requirements.
ii) Scaffolding clarifies purpose. The objective of the activity should be clearly defined and informed. This helps students to understand why they are doing the work and why it is important.

iii) Scaffolding keeps students on task. The task is structured in a way that it can keep students from getting distracted and ‘wandering off’. McKenzie draws an analogy of a garden where students have more than one path wandering through the garden, but none of them leads into ‘a jungle or swamp or a tiger pit’.

iv) Scaffolding incorporates assessment. Criteria for task assessment should be made clear since at the beginning. This may include a sample of qualified work, rubrics and standards of performance.

v) Scaffolding is to point students to a variety of worthy sources to reduce searching time and focusing more on the information most worthy of consideration.

vi) Scaffolding reduces uncertainty and disappointment. Lessons should be tested each and every step to find out what might go wrong to minimize frustration as much as possible.

vii) Scaffolding delivers efficiency. The task is well organized and focused. Hence, a large amount of task can be completed in a shorter time.

viii) Scaffolding creates momentum. The structure of task shapes the focus of the class in a way that momentum can be built into. Consequently, it becomes a driving force for further study.

In a content-based course, the teacher may have to use a variety of scaffoldings to help English language learners understand grade- and age-appropriate subject matter concepts. Rosen and Sasser (1997) suggest productive conveyance of concepts to the students with limited English proficiency as follows

• Create a relaxed and welcoming atmosphere.
• Use visual materials to supplement printed text when possible
• Model and demonstrate frequently.
• Utilize collaborative and cooperative structures.
• Vary the sizes and purposes of group structures.
• Modify their speech.
Make frequent comprehension checks.
Demonstrate a variety of questioning types, modifying difficult, open-ended questions to elicit one-word answers or yes/no.
Build on and expanding the students’ background knowledge.
Focus on key concepts and contextualized them.

In conclusion, incorporation of scaffolding strategy in a teaching context can potentially engage students in the learning process. Clear directions provided can minimize frustration that students might encounter. Scaffolding also requires the teacher to give up some of the control and allow students to take risks and make errors. Consequently, when students’ abilities have increased, scaffoldings provided by the teacher or more competent peer are progressively withdrawn. Eventually, they are able to complete the task or master the concepts/skills independently.

2.4.2 A framework for materials construction

A careful examination of literature relating to the integration of content and language in the language classroom, the process of materials writing and some relevant approaches provides a comprehensive understanding of language materials construction. This section focuses on the proposed framework for CBI language materials construction in the present study.

A) Embracing content and language knowledge

Integrated language and content instruction has become a popular alternative to traditional ESL instruction (Short, 1993). Its influential dual goal of CBI approach, content and language learning, has shaped the design of materials construction for the proposed study. It supports contextualized learning. Students are considerably exposed to genuine discourses embedded in their content learning contexts rather than discrete linguistic components. Naturally, content-based tasks create opportunities for students to use content knowledge and expertise that they bring to class to learn additional language. In another way, they also apply their language knowledge to comprehend the content materials. These two types of knowledge greatly facilitate each other. To promote these two abilities
simultaneously, content and language are thus integrated in the constructed materials.

**B) Fostering thinking skills**

It is believed that for effective content learning, students must be cognitively engaged in the learning process (Coyle, 2010). Similar approaches to CBI like Cognitive Academic Language Learning Approach (CALLA) and CLIL also take the issue of the intellectual challenge into account (Chamot & O’Malley, 1994 and Coyle, 2010). In other words, tasks should entail students to develop high order thinking: analyzing, evaluating and creating. Given the importance of this aspect, attempts are made to involve students in higher order thinking activities.

**C) Catering for objective and subjective needs**

The integration of content learning in language materials tends to be responsive to students’ objective needs or real world requirements. Moreover, considerable attention paid to the students’ subjective needs can positively affect the quality of students’ involvement in the learning process (Tudor, 1996). Keeping in mind these two types of needs, topical contents are selected in consultation with content specialists to ensure that constructed materials can cater for students’ needs. Students are also involved in the planning stage. Needs assessment is carried out to find out their topics of interest, language functions perceived as relevant and the preferred learning situations. Subsequently, thematic units are specially devised based on the obtained information. In this way, the constructed materials are learner-centred.

**D) Authentic content**

A major language goal of CBI and CLT is to fulfill students’ target uses of language. It necessitates authentic materials. Authentic texts refers to ‘...real-life texts, not written for pedagogic purposes” (Wallace, 1992:145). The use of authentic materials allows students to be exposed to real texts designed for the speakers of the language. This can potentially prepare them to real language use. However, in CBI, authentic materials can also refer to the materials used in the course content. The present study thus mainly exploits the materials drawn from the
students’ course of study. It is also realized that the materials may be unnecessarily difficult to comprehend. Texts taken from the students’ course content are not simplified for classroom use. Instead, variety of scaffoldings are provided to enable students to cope with difficulty. This may include lead-in discussion, vocabulary games, prompt questions, visual materials or modifying speech etc.

**E) Communicative tasks**

Effective use of language for communicative purpose requires two important types of competence: grammatical and communicative competences. These two competences entail the integration of different types of activity in the developed materials. In CLT, teachers are recommended to use a balance of fluency and accuracy activities (Richards, 2011). Form-focused activities can be used to support fluency activities. Littlewood (2002) suggests alternative ways for grammatical practice that moves away from traditional formats of dialogue memorization and drills towards the use of pair work and role-plays. Therefore, the developed units contain a variety of meaning-oriented activities and some functional grammar activities are included to enhance the quality of language communication.

**F) Sequencing tasks by students’ responses**

Educators suggest numerous ways for task sequencing. They can be arranged in terms of type of activity, cognitive load, communicative stress or familiarity, process continuity or type of response etc. Those criteria are extensively discussed in Section 2.2.5. To appropriately sequence language tasks, teachers should take factors associated with the learner, input and activity into consideration. However, it may not be easy to determine which task is more complex, familiar or interesting that the others. This is because students differ in numerous ways viz. background knowledge, cognitive ability, interest etc. For the present study, CBI tasks are first introduced to students. It is believed that in the initial stages, there is often a silent period and learning can take place without production (Littlewood, 1986). Students are constructing a system that enables them to speak when they are ready. At the initial stage, tasks that require them to respond verbally or in written forms may be found too demanding. Therefore, the developed tasks are organized according to the types of response (no overt response to extended response).
To conclude, the developed thematic units will embrace two goals: content and language learning and involve students in higher-ordered thinking activities. Materials are specially designed to be responsive to students’ objective needs and subjective needs. That is, the developed materials will reflect the real-world needs and take psychological and affective factors into account. The topical materials are drawn from students’ course content and gathered from different sources, which are not prepared for the language class. Hence, they are authentic. Keeping in mind the CLT framework, the developed tasks are mainly meaning-based. However, some particular patterns of language are also explicitly taught to enhance the quality of communicative competence. Finally, the tasks will be sequenced in terms of the responses from no overt response to extended response.

2.5 Additional considerations for materials evaluation

A general framework for materials evaluation is already discussed in Section 2.3. This section is exclusively devoted to the evaluation framework for the present study. To have a clear picture of how the constructed materials are evaluated, it is important to discuss two related issues: (1) thinking skills and (2) learning and production. Thinking skills is first delineated.
2.5.1 Taxonomy of thinking skills

It is not always easy to ensure that what is taught is being learned. This raises a question whether the test scores students received at the end of the semester can be indicators to show that learning has occurred. Coyle et al. (2010: 29) argue that in CLIL, for content learning to be effective learning, students must be cognitively engaged. Teachers have to involve the students in the activity that enables them to think through and articulate their own learning. This gains support from one of the studies by the Department of Education, Queensland (2002: 1) which showed that to raise achievement levels, learners had to be intellectually challenged in order to transform information and ideas, to solve problems, to gain understanding and to discover new meaning. Thinking skills become a crucial aspect for learning to take place. It is found that thinking skills defined by Bloom has been extensively exploited in many studies focusing on the improvement of classroom instruction and the quality of thinking in academic education (Lord & Baviskar, 2007, Pickard, 2007, Amer, 2006, Mayer, 2002, Raths, 2002, Byrd, 2002 and Ferguson, 2002). It, therefore, is worth elaborating on Bloom’s taxonomy as follows.

Bloom (1956) outlines six major categories of cognitive domain: Knowledge, Comprehension, Application, Analysis, Synthesis and Evaluation. It has been in a hierarchical order, that is, a mastery of the simpler category is prerequisite for the next more complex one. A complete structure of the taxonomy is shown in Table 2.5.

<table>
<thead>
<tr>
<th>1. Knowledge</th>
<th>1.1 Knowledge of specifics</th>
<th>1.11 Knowledge of terminology</th>
<th>1.12 Knowledge of specific facts</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.2 Knowledge of ways and means of dealing with specifics</td>
<td>1.21 Knowledge of conventions</td>
<td>1.22 Knowledge of trends and sequences</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.23 Knowledge of classifications and categories</td>
<td>1.24 Knowledge of criteria</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1.25 Knowledge of methodology</td>
<td>1.31 Knowledge of principles and generalizations</td>
<td></td>
</tr>
<tr>
<td>1.3 Knowledge of universals and abstractions in a field</td>
<td>1.32 Knowledge of theories and structures</td>
<td></td>
<td></td>
</tr>
<tr>
<td>2. Comprehension</td>
<td>2.1 Translation</td>
<td>2.2 Interpretation</td>
<td>2.3 Extrapolation</td>
</tr>
</tbody>
</table>

Table 2.5
3. Application

4. Analysis

4.1 Analysis of elements
4.2 Analysis of relationships
4.3 Analysis of Organizational principles

5. Synthesis

5.1 Production of unique communication
5.2 Production of a plan, or proposed set of operations
5.3 Derivation of a set of abstract relations

6. Evaluation

6.1 Evaluation in terms of internal evidence
6.2 Judgments in terms of external criteria

Table 2.5 Structure of Bloom’s taxonomy

**First level: Knowledge**

Bloom defines ‘Knowledge’ as learning behaviors/situations that require remembering. In the learning situation, students are expected to remember certain information. When the questions or problems are posed, they may have to identify or retrieving relevant knowledge from long-term memory. Hence, these behaviors deal with two associated cognitive processes: recognizing and recalling. He also outlines three categories of knowledge dimension with nine subcategories. These include

1. Knowledge of specifics: knowledge of terminology and knowledge of specific facts
2. Knowledge of ways and means of dealing with specifics: knowledge of conventions, knowledge of trends and sequences, knowledge of classifications and categories, knowledge of criteria and knowledge of methodology
3. Knowledge of universals and abstractions in a field: knowledge of principles and generalizations and knowledge of theories and structures

**Second Level: Comprehension**

The term ‘Comprehension’ includes the abilities that students are able to construct meaning or demonstrate an understanding of the instructional messages including a range of communication: oral, written or graphic forms. Three types of comprehension behavior comprise

1. Translation requires the ability to give denoted meaning of various parts of a communication prior to change the communication into other language, terms or another form of communication.
2. Interpretation refers to the behavior that involves converting information from one form of representation to another. It may also be found in the situations that require inferences, generalizations or summarizations.

3. Extrapolation includes estimating and forming an opinion based on the understanding. It also requires the ability of making translation and interpretation.

**Third Level: Application**

‘Application’ demands the ability of both remembering and understanding of method, theory or principle. At this level, those types of knowledge will be used to solve new problems posed or to implement in the new situation.

**Fourth level: Analysis**

‘Analysis’ highlights three level of analysis: analysis of elements, relationships and organizational principles. The first one emphasizes breaking material into its constituent parts. The second level involves determining the relationships among elements while the third one focuses on the way they are organized or structured.

**Fifth level: Synthesis**

‘Synthesis’ involves putting elements to form a whole. In other words, it is the ability to creatively reconstruct elements into a new pattern or structure. Synthesis is divided into three categories:

1. Production of unique communication refers to generating stage. That is, the attempt to find possible or appropriate solutions is made.

2. Production of a plan or proposed set of operations deals with planning or designing a method for carrying out the operation.

3. Derivation of a set of abstract relations involves implementing or inventing a product.

**Sixth level: Evaluation**

‘Evaluation’ refers to making judgment about the value of ideas or works whether the given task is accurate, effective, economical or satisfying.
Evaluation can be qualitatively or quantitatively conducted based on the internal evidence or external criteria.

Taxonomy is revised to make it agreeable to the way educational objectives are usually framed. Krathwhol (2002: 213) describes characteristics of the educational objectives.

Objectives that describe intended learning outcomes as the result of instruction are usually framed in terms of (a) some subject matter content and (b) a description of what is to be done with or to that content. Thus, statements of objectives typically consist of a noun or noun phrase—the subject matter content—and a verb or verb phrase—the cognitive process(es).

Hence, the revised version of Bloom’s taxonomy has been widely used in the gerund verb form as in Table 2.6

<table>
<thead>
<tr>
<th>Original Taxonomy</th>
<th>Revised Taxonomy</th>
<th>Related Cognitive Process</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Knowledge</td>
<td><strong>Remember</strong>-Retrieving relevant knowledge from long-term memory</td>
<td>1.1 Recognizing</td>
</tr>
<tr>
<td>2. Comprehension</td>
<td><strong>Understand</strong>-Determining the meaning of instructional messages, including oral, written, and graphic communication</td>
<td>2.1 Interpreting</td>
</tr>
<tr>
<td>3. Application</td>
<td><strong>Apply</strong>-Carrying out or using a procedure in a given situation</td>
<td>3.1 Executing</td>
</tr>
<tr>
<td>4. Analysis</td>
<td><strong>Analyze</strong>-Breaking material into its constituent part and detecting how the parts relate to one another and to an overall structure or purpose</td>
<td>4.1 Differentiating</td>
</tr>
<tr>
<td>5. Synthesis</td>
<td><strong>Evaluate</strong>-Making judgments based on criteria and standards</td>
<td>5.1 Checking</td>
</tr>
<tr>
<td>6. Evaluation</td>
<td><strong>Create</strong>-Putting elements together to form a novel, coherent whole or make an original product</td>
<td>6.1 Generating</td>
</tr>
</tbody>
</table>

Table 2.6 Comparison of original and revised taxonomy

From the above table, three categories are renamed. **Knowledge**, **Comprehension** and **Synthesis** are changed to **Remember**, **Understand** and **Create** respectively. **Application, Analysis and Evaluation** are used in their verb forms as **Apply, Analyze and Evaluate**. The order of the fifth and sixth categories is switched.
In addition, the knowledge dimension has also been revised, the fourth category, *Metacognitive knowledge*, is added to the original taxonomy as in Table 2.7. Krahtwohl (ibid) demonstrates the fourth category with its subcategories.

<table>
<thead>
<tr>
<th>Knowledge Dimension</th>
<th>Subcategory</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>A. Factual Knowledge:</strong></td>
<td>The basic information;</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of terminology</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of specific details and elements</td>
</tr>
<tr>
<td><strong>B. Conceptual Knowledge:</strong></td>
<td>The interrelationships among the pieces of larger structure which enables them to function together;</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of classifications and categories</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of principles and generalizations</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of theories, models, and structures</td>
</tr>
<tr>
<td><strong>C. Procedural Knowledge:</strong></td>
<td>How to do something;</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of subject-specific skills and algorithms</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of subject-specific techniques and methods</td>
</tr>
<tr>
<td></td>
<td>• Knowledge of criteria for determining when to use appropriate procedures</td>
</tr>
<tr>
<td><strong>D. Metacognitive Knowledge:</strong></td>
<td>Knowledge of thinking in general and individual thinking</td>
</tr>
<tr>
<td></td>
<td>• Strategic knowledge</td>
</tr>
<tr>
<td></td>
<td>• Knowledge about cognitive tasks, including appropriate contextual and conditional knowledge</td>
</tr>
<tr>
<td></td>
<td>• Self-knowledge</td>
</tr>
</tbody>
</table>

Table 2.7 Revised structure of the knowledge dimension

The review of Bloom’s Taxonomy provides an important framework for teachers aiming to develop the students’ thinking ability. In general, questioning is one of the classroom techniques frequently used to provoke students’ thinking. The teacher may ask questions for different purposes: to assess the level of students' comprehension, to develop students’ interest or motivation, or to establish relationships between concepts (Dyer, 2008). In addition, Chi Duc (2008) identifies abundance of benefits of questions that are well documented in many books and studies by Vidakovic et.al. (2004), Surjosuseno & Watts (1999), Tarlinton (2003), Pohl (2000), Hoang (2007), Knutson (1997), Schraw & Dennison (1994), Rinninger et. al. (1992), Graff (1992), Hidi & Anderson (1992), Schiefele (1992) and Brophy (1998). The types of questions used by teachers will reflect the level of thinking students engage in. It is, therefore, desirable that teachers ask higher-level questions that entail analyzing, evaluating and synthesizing the content materials rather than merely recalling factual information. Table 2.8 illustrates various questions subscribing to a different category of Bloom’s hierarchical cognitive process.
**I. Remember:** shallow processing: drawing out factual answers, testing recall and recognition

<table>
<thead>
<tr>
<th>Verbs for Objectives</th>
<th>Model Questions</th>
</tr>
</thead>
<tbody>
<tr>
<td>Choose, describe, define, identify, label, list, locate, match, memorize, name, omit, recite, recognize, select, state</td>
<td>• Who?  • Where?  • Which one?  • What?  • How?  • What is the best one?  • Why?  • How much?  • When?  • What does it mean?</td>
</tr>
</tbody>
</table>

**II. Understand:** translating, interpreting and extrapolating

| Classify, defend, demonstrate, distinguish, explain, express, extend, give, example, illustrate, indicate, interrelate, interpret, infer, judge, match, paraphrase, represent, restate, rewrite, select, show, summarize, tell, translate | • State in your own words.  • Which are facts?  • What does this mean?  • Is this the same as . . .?  • Give an example.  • Select the best definition.  • State in one word . . .  • Explain what is happening.  • What part doesn't fit?  • What expectations are there?  • Read the graph (table).  • This represents . . .  • What seems to be . . .?  • Is it valid that . . .?  • What seems likely?  • Show in a graph, table.  • What restrictions would you add? |

**III. Apply:** knowing when to apply; why to apply; and recognizing patterns of transfer to situations that are new, unfamiliar or have a new slant for students

| Apply, choose, dramatize, explain, generalize, judge, organize, paint, prepare, produce, select, show, sketch, solve, use | • Choose the best statements that apply.  • Judge the effects.  • What would result.  • Tell how, when, where, why.  • Tell how much change there would be.  • Identify the results of... |

**IV. Analyze:** breaking down into parts, forms

| Analyze, categorize, classify, compare, differentiate, distinguish, identify, infer, point out, select, subdivide, survey | • What is the function of . . .?  • What's fact? Opinion?  • What assumptions. . .?  • What statement is relevant?  • What motive is there?  • Related to, extraneous to, not applicable.  • What conclusions?  • What does the author believe?  • Make a distinction.  • State the point of view of . . .  • State the point of view of . . .  • What ideas apply?  • What ideas justify the conclusion?  • What's the relationship between?  • What's the main idea? Theme?  • What inconsistencies, fallacies?  • What literary form is used?  • What persuasive technique?  • Implicit in the statement is... |

**V. Evaluate:** according to some set of criteria, and state why

| Appraise, judge, criticize, defend, compare | • What fallacies, consistencies, inconsistencies appear?  • Which is more important, moral, better, logical, valid, appropriate?  • Find the errors.  • State the point of view of . . .  • State the point of view of . . .  • What ideas apply?  • What ideas justify the conclusion?  • What's the relationship between?  • What's the main idea? Theme?  • What inconsistencies, fallacies?  • What literary form is used?  • What persuasive technique?  • Implicit in the statement is... |

**VI. Create:** combining elements into a pattern not clearly there before

| Choose, combine, create, compose, construct, do, design, develop, invent, formulate, hypothesize, make, make up, originate, organize, plan, produce and role play | • How would you test . . .?  • Propose an alternative.  • Solve the following.  • How else would you . . .?  • State a rule. |

Table 2.8 Sample questions at each level of thinking skills : adapted and taken from http://cte.uwaterloo.ca/KSU/Bloom’s_Taxonomy_Cognitive_Domain.pdf
Bloom’s Taxonomy proves powerful for objective-based evaluation (Marzano: 2006:2). However, the taxonomy is criticized for not having any research support. The study on his taxonomy simply did not support the structure. Marzano (2006) points out that thinking may not take place in the hierarchical order or linear dimension.

It is quite possible that the evaluation process will in some cases be the prelude to the acquisition of new knowledge, a new attempt at comprehension or application, or a new analysis and synthesis (9).

However, the classification of thinking skills provides a threshold of how one can develop thinking skills and cognitive ability. It is still acknowledged as useful by many researchers and pedagogical practitioners as it can be found in many studies and teacher training programmes. Questioning, a classroom technique, can potentially encourage students’ cognitive engagement and subsequently leads to learning establishment. Recognizing this potential, the present study takes teacher’s questioning into account to determine whether learning has been established.

2.5.2 Learning and production

Learning a second language is usually discussed from two psychological perspectives: behaviorism and constructivism. From the behaviorist point of view, learning is the result of direct relationship between stimuli and responses. It ignores the mental process occurring inside learners. In other way, constructivist learning theory emphasizes the importance of cognitive process. Learning take place as a result of mental constructs. This theory attempts to explain how learners construct knowledge. These two learning perspectives have had substantial influence in educational contexts. They provide a conceptual framework for the designs of teaching and learning activities.

In the context of second language learning, behavioral learning theory has greatly influenced on some traditional language teachings methods such as the Oral Approach and Situational Language Teaching and Audio Lingual Method (Richards and Rodgers, 1986). However, evidence has accrued that some tasks require complex thinking or information processing rather than simple reinforcement and practice. Littlewood states ‘a model of second language learning
that has become increasingly influential is one which sees it as a process of ‘creative construction’ (1986: 69). According to this model, learners are exposed to second language in natural settings and then develop an internal system for second language acquisition, which is similar to the process of first language learning as shown Figure 2.8.

![Figure 2.8 First and second language acquisition pattern](image)

It is common knowledge that learners are different in many aspects viz. cognitive ability, personality, age, background knowledge or learning motivation etc. It is thus possible that each learner processes inputs in different ways and proceeds through different stages in learning the language. It is often said that second language learners may be endowed with an ‘internal syllabus’. This notion is relevant to what Allwright (1984) discusses in his unpublished paper on the personal agenda hypothesis. Learners selectively take from a lesson only those things that they want and only in the manner that they want to do it. This may conflict with things they are taught. Perceived in this way, language learning may/may not be predicted or controlled by language teaching. Teaching thus can only improve opportunities for language learning. Allwright uses the term ‘Uptake’ to represent what is learned by the learners. Knowledge they gain may vary from person to person. This notion tends to be well accepted by researchers. In communicative task evaluation, Ellis uses an ‘uptake’ chart as one of the tools for students to reflect what they learn (Ellis, 2008).

Learning progress can occur both consciously and subconsciously. Task-based teaching and CBI hold similar premise on learning progress. While the conscious mind is working out some of the meaning-content, a subconscious part of the mind acquires some of the linguistic structuring embodied in those entities (Prabhu, 1987 and Brinton et al, 2006). The results of many studies tend to support the assumption. An experiment done by Paribakht and Wesche revealed that the process of reading and retelling a text promoted incidental vocabulary learning.
Moreover, Day (1991) reports research on the relationship between reading and indirect vocabulary learning carried out by Saragi, Nation and Meister (1978), Jenkins, Stein and Wyoski (1984), Konopak, Sheard, Longman, Lyman, Slaton, Atkinson and Thames (1987), and Nagy, Anderson and Herman (1987). These studies found evidence showing that children could learn vocabulary indirectly in context while reading. Nagy et al. (1987:261) claim that the results “demonstrate beyond reasonable doubt that incidental learning of word meanings does take place during normal reading”.

An effort to work out meaning-content is thus a favorable condition for subconscious learning of language structure. Moreover, recurrent effort at comprehension leads to the gradual growth of an internal linguistic competence. If this premise is accepted, the implication for second language pedagogy is that language materials should be meaningful in orientation, contain new language items and more importantly, learners should be exposed to the similar tasks consistently.

Generally, the basic learning process involves two important steps: comprehension and production. Learners effectively process new information and subsequently they use language to demonstrate their cognitive development. In second language learning contexts, second language production can take several forms of communications that are spoken, written and signed. Nevertheless, it can be the case that learning can take place without observable demonstration of knowledge. Littlewood (1986) argues that the internal processing mechanisms can operate effectively even when the learner is not producing language. Active participation thus plays an important role for learning. The language teacher may have to observe whether learners are involved in a deeper sense: processing mentally the information to which they are exposed.

In conclusion, the discussion above provides a conceptual framework of how learning takes place held by educators/researchers. In language learning context, learners can learn incidental English while they are focusing on new information. However, learners use an internal mechanism to construct their own knowledge. They may process different aspects of information from the same piece of language. The gained knowledge thus varies from person to person depending upon the way they perceive the particular piece of information as well as the degree
of attention. However, they may/may not demonstrate their learning progress verbally or non-verbally. This is because production requires relatively high level of linguistic confidence. It also runs the risk of being noticed. This factor may interact with other characteristics of the learners.

For the present study, it is realized that integration of students’ course content in CBI materials tends to impose additional cognitive and linguistic demands on the students than traditional language materials. Moreover, their language ability is at the ‘beginner’ level. It is possible that, in the initial stage, students will not have adequate language ability to express what they learned verbally or in a long written form. The present study exploits two techniques of knowledge elicitation: classroom observation and students’ reflection.

1. It focuses on how students cognitively engage in the learning activities. It is assumed that students should be able to complete the assigned activities that include such activities as completing grids, drawing diagrams or pictures, matching information, determining whether the given statements are true or false, correcting facts which are wrong, making simple presentations linked to visuals or answering content-based questions with a simple yes/no response. These task formats require little language knowledge to stimulate content recall. However, on the basis of simple responses it should not be inferred that students do not engage in the complex level of thinking. Importantly, language should not be a barrier to demonstrate understanding of content. Students’ interaction in their first language on content can also be another source for monitoring knowledge gained.

2. As learning can take place without observable production, reflection is another technique commonly used to examine students’ learning. In addition to classroom observation, students are also required to reflect their content knowledge and language items learned from the developed materials.

2.5.3 A framework for materials evaluation

To have a comprehensive picture of the effectiveness of the constructed materials, two types of evaluation are carried out, predictive and retrospective evaluation.
A) Predictive evaluation

As already discussed in 2.4.2, the underlying principles for materials construction consist of six major aspects: (1) embracing content and language knowledge, (2) fostering thinking skills, (3) catering for objective and subjective needs, (4) authentic materials, (5) communicative tasks and (6) sequencing tasks by students’ responses. These principles are also used as criteria for predictive evaluation of the constructed materials. Some aspects are grouped together and termed under different titles. However, some aspects remain the same. Given below are different aspects used in predictive evaluation to seek the effectiveness of constructed materials.

i) Objectives: The underlying principle of content-based language instruction is to integrate learning of both language and the subject matter. Accordingly, the objectives of the thematic units should contain two types of objective: content and language objectives. Tasks should be able to develop students’ second language competence as well as content knowledge simultaneously.

ii) Methodology: It contains two aspects of a framework for materials construction: catering for objective and subjective needs and communicative tasks. In response to students’ needs, thematic units should cater for their real-world requirement and their learning preference. The way in which students perceive topics immensely affect the level of contribution. When learning topics are perceived as relevant, interesting and important, students will automatically apply cognitive powers to develop their competence. Moreover, the units should contain communicative tasks. However, some communicative grammar activities are also integrated to enhance the quality of communicative competence.

iii) Content authenticity: In response to students’ real world requirement, content has to be authentic. On one hand, content authenticity refers to the content that is actually learned in the content class. On the other hand, it can be relevant materials from various sources, which are not originally produced for language teaching purposes. However, it is preferable that CBI materials are taken from the course content.
iv) **Language learning**: The course materials should be appropriate to the students’ language ability and contain a wide range of linguistic items and genuine discourse so that it improves chances for language practices.

v) **Task sequencing**: The array of activities in each task aims at gradually increasing students’ cognitive operations and so it is progressively more demanding. Recognizing the silent period at the initial stage of learning, the sequence of activities is determined by students’ responses progressing from a no overt response to that which involved discussion.

vi) **Coherence of tasks**: The cohesiveness of the sequential task can be seen in a way the completion of the preceding task automatically and logically led to the next task.

The criteria outlined above try to reflect major aspects of three teaching approaches adopted to materials construction CBI, LCA and CLT in terms of objectives, methodology and authenticity of content. As integration of content raises the issue of thinking skills and intellectual challenge, it may not be easy to predict the way students cognitively engage in the learning activity. This aspect of the materials can be best investigated in the actual classroom. It thus necessitates the task trialling to examine how the task can facilitate students’ thinking ability. The next section discusses issues to be examined in the classroom process, retrospective evaluation.

**B) Retrospective evaluation**

Basically, materials evaluation involving task implementation in the actual classroom aims to address three major questions: how the task is performed, what learning takes place and what the teacher and learners feel about the task (Ellis: 2008). It is assumed that involving students to think through during the classroom activities, to a certain degree, can ensure learning to occur. The present study thus examines whether constructed materials can foster thinking skills, evidence for content and language learning as well as the way students perceive the materials. These aspects are discussed below.
i) **Fostering thinking skills**

Review of literature on thinking skills conceptualizes the classification of low and high level thinking skills and a classroom technique frequently used to provoke the students’ thinking—questioning. Questions influence cognitive process. They provide opportunities to practice retrieving information from long-term memory and focus the students' attention on the learning materials. They also give students chance to repeat core concepts (Thalheimer, 2003). Different types of questions provoke different levels of thinking skills. Questions should be at high-level thinking skills so that it improves chances for complex thinking. The present study thus seeks to scrutinize whether the teacher’s questions related to the tasks can foster high level thinking skills.

ii) **Enhancing learning**

CBI classrooms can vary in terms of primary focus. This depends upon the teaching model adopted (See 2.1.2 for prototypical models of CBI). The present study pays equal attention to both content knowledge and language ability. It is realized that learning and production require different skills (receptive and productive skills). It is possible that at the initial stage students will not be able to demonstrate measurable gain or produce observable behaviors. However, it is assumed that active participation potentially stimulates mental operation to process information. It is appropriate to examine the types of activity the students engage in as evidence of mental processing. In addition, the study employs reflection technique to elicit the content and language gains from the students.

iii) **Students’ perception of task difficulty and interest**

There are numerous psychological factors potentially affecting students’ learning behaviors and their contribution. In CBI, integration of course content in the language materials raises two significant issues: interest and cognitive challenge. ‘Interest’ is an important psychological factor that can considerably influence learning motivation and the degree of involvement (APA, 1997). Assuming that the thematic topics drawn from the course content should potentially attract students’ attention, the study seeks to examine how the students perceived the tasks in terms of interest.
In addition, the intellectual challenge is another concern in CBI classroom. This is because new content knowledge is introduced with unknown words and phrases. Facing extremely difficult content in a classroom situation, students may automatically develop a certain degree of anxiety that subsequently turns them off-task. Students’ perception of task in terms of difficulty is thus another issue to be examined.

In conclusion, major issues to be explored in retrospective evaluation comprise high level thinking skills, content and language enhancement as well as students’ perception in terms of task difficulty and interest.

To conclude, predictive and retrospective evaluation is carried out to closely investigate the effectiveness of the constructed materials. Prior to task trilling, the effectiveness of the task is determined in terms of objective, methodology, content authenticity, content as a source of language learning, task sequencing and task coherence. During the classroom process, task effectiveness will be closely scrutinized to address such issues as thinking skills, content and language enhancement and students’ perception in terms of task difficulty and interest. The framework for task construction and evaluation is given in Figure 2.9.

2.6 Summary

This chapter first discusses the distinction between CBI and ESP in terms of purposes, instructional format, teacher responsibility, population and focus of evaluation. It also provides a clear view on three teaching models of CBI approach: Theme-based, Sheltered and Adjunct models. The second issue deals with some theoretical considerations on materials construction. These include significant attributes of second language materials, a framework of context and syllabus, the process of materials writing, grading and sequencing tasks.

Next, the issues on the materials evaluation are delineated: predictive and retrospective evaluation. The fourth one focuses on some additional considerations for materials construction: LCA, CLT and scaffoldings as well as materials construction framework.

Finally, it describes some issues related to materials evaluation: the notion of thinking skills, the nature of learning and production and a framework for materials
evaluation. The next chapter will present the research methodology used for the study and the instruments for data collection.
Figure 2.9 Framework for materials construction and evaluation.