A MATERIALS DESIGN MODEL

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It is estimated that over one billion speakers of English currently exist in the world[1]. Many are learning English in order to communicate with non-native speakers and for purposes of gaining access to the latest social, economic, scientific and technical information. The general public, professionals, and students increasingly request English language courses due to their specific needs and interests.

There are some reasons why the use of English is growing so fast: the access to more sophisticated means of communication, including the growing use of fax, E-Mail, and Internet; the amount of international affairs and tourism around the world; and the international development of scientific research, business and technology.

Many teachers of English as a Foreign Language at one point or another in their professional careers move from teaching general English to teaching English for Specific Purposes (ESP). As ESP teachers they must analyze students' needs, develop content-based courses, and use authentic materials to facilitate students' access to the content. The problem is that commercial material is rarely available to them.

Some explanations for this are that the market is very limited because the courses timetables are variable; the material could have

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1. T. Brown and F. L. Perry, «A Comparison of Three Learning Strategies for ESL Vocabulary Acquisition», *Tesol Quarterly*, 25-4 (1991) 655-668.

been designed for a one-month intensive course, or for a one-semester or three-year course. There is a great variety of courses and it is hard to find commercial materials suitable for such a profusion of courses and specialisms. Even when the instructor finds suitable materials, many times it is not possible to buy them because of import or currency problems. And finally, existent materials may have not been written for educational purposes[2].

Material writing should be regarded as the last resort. Teachers should use existing materials, select units from different sources of materials, adapt materials by changing the texts or the exercises, and produce materials only for the area that strictly needs them. If teachers have to design their own materials, they should use materials that already exist as a source of ideas, and work in a team[3].

The model presented in this paper emerges as a response to the growing trend in TESOL to develop English language teaching materials that will assist teachers in meeting the language and content needs in different disciplines. Even though this model is slightly slanted to the preparation of reading comprehension materials, the main purpose is to present it in such a way that it could be applied to the design of any type of material. Thus, this model is a guideline for the preparation, evaluation and improvement of instructional materials.

A materials design model. Step 1: conducting a needs assessment

The needs analysis is the primary foundation for any teaching experience. It is crucial to know what the students' needs are. Pratt[4] defines needs assessment as "an array of procedures for identifying and validating needs, and establishing priorities among them". To do

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2. T. Hutchinson and A. Waters, *English for Specific Purposes: a Learning-Centered Approach* (Cambridge: Cambridge University Press, 1987).

3. Hutchinson and Waters, *op. cit.*

4. Pratt (1980) in J. Richards, *The Language Matrix* (Cambridge University Press, 1994).

this, the instructor can use several tools such as questionnaires, interviews and observations. The questionnaire can be administered to students, instructors, and administrators. The interview can be applied to students, teachers and administrative staff, and any other person involved in the teaching-learning process of the student. It is also important to observe the real situation and environment in which the students will apply their knowledge. The needs assessment provides a diverse range of input into the content, design and implementation of the material.

Step 2: Specification of the curriculum

This step includes a philosophy of education, and a cultural philosophy that is influenced by the context in which the material will be used. The type of curriculum chosen will provide a foundation for the nature of language and the nature of language learning that will be reflected in the materials.

The cultural philosophy considers aspects such as: program, school, institution, government, community, country, etc. It is important to sense the individual and group attitudes toward the target language and find out about the political, and national priorities in the community at the particular point in history. Material designers can do this through observation and attitude assessment[5].

The philosophy of education provides the philosophical orientations in education that have given rise to different trends in curriculum design such as the liberal, progressive, behaviorist, humanistic, radical, and analytical[6]. Based on the orientation chosen the designer decides what theory of language s/he will use (a structural,

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5. F. Dubin, F. and E. Olshtain, *Course Design* (New York: Cambridge University Press, 1994).
6. F. Elias and S. Merriam, *Philosophical Foundations of Adult Education* (Florida: Krieger Publishing Company, 1984).

functional or interactional view), and what theory of language learning s/he will choose (behavoristic, cognitivist, or humanistic)[7].

Goodlard and Su mention some ways that have been used to organize curricula for decades: around decisions of scope, integration, and sequence and continuity; using four sequencing approaches: the chronological, the thematic, the part-to-whole, and the whole-to part with critical inquiry that organizes the curriculum around moral issues in society; around four topics: learners, teachers, subject matter, and milieu; considering the development of cognitive processes that focus on the process (the 'how' rather than the 'what' of education); around technology that stresses the process and not the individual; around subject disciplines that are individually and sequentially presented integrated or interrelated keeping or losing their distinct identities in the blending; taking into account social issues; etc.[8].

In spite of the different ways of organizing a curriculum that have existed during the years, it is important to emphasize the use of the humanistic trend in curriculum organization nowadays. This philosophy finds rich ground in both general and adult education. In both contexts the student is the center of the process, the teacher being a facilitator and learning occurring by discovery[9].

Cohen, Nunan, O'Malley and Chamot, Oxford, Scarcella and Oxford and Knowle's concept of andragogy allege that because adults learners are self-directed, they should self-diagnose their learning needs and self-evaluate their learning process.

Nunan claims that the learner-centered curriculum has two goals to fulfill: the learner has to learn the language and become conscious of his role as an active agent within the learning process. This new trend points to a new holistic approach to learning.

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7. J. Richards and T. Rogers, *Approaches and Methods in Language Teaching* (New York: Cambridge University Press, 1993) 128-142.

8. Armstrong, 1989, Habermas, 1971, 1973, 1975, Schwa, 1973, Piaget, 1962, Bruner, 1960, Cagne, 1967, Hunkins, 1980, Tanner and Tanner, 1980, Klein, 1985 in P. W. Jackson (ed.), *Handbook of Research on Curriculum* (New York: Mac Millan Publishing Company, 1992).

9. F. Dubin and E. Olshtain, *Course Design* (New York: Cambridge University Press, 1994).

A further organizational pattern is the hybrid. In fact, all forms of curriculum organization are hybrid. The balance presented by Tyler among learners, subject matter, and society is an important contribution on this respect. It must be added that rarely is any curriculum organized solely around one of these trends or modes of thought.

No matter what type of curriculum organization the material designer chooses, it will always reflect directly on the material.

Step 3: Selection of the syllabus type

Depending on the decisions made on the previous step, the material designer has to choose a type of syllabus. A syllabus is a plan that will guide the teaching-learning process. This plan includes the knowledge, and learning outcomes expected[10]. McKay states that a syllabus is the route to achieve the goals of a curriculum. It describes what should be taught and in what order. Material designers have to decide which of the following syllabi will be the most adequate: structural, notional-functional, situational, skill-based, task-based, or content-based. Usually instructors work with a combination of syllabus types[11].

There is a relation between material and syllabus. The material will cover all those items previously established as important in the development of learning. The units will eventually cover all items included in the syllabus structure[12].

Step 4: Specification of the thematic content of the materials

It is important that the information of the needs analysis be used in selecting topics the students might be more interested in reading.

10. Michael P. Breen, «Contemporary Paradigms in Syllabus Design», part I, *Language Teaching* (April 1987).
11. K. Kranhke, *Approaches to Syllabus Design for Foreign Language Teaching* (New Jersey: Prentice Hall, Inc., 1987).
12. Hutchinson and Waters, *op. cit.*

The material designer could also choose them according to the topics the students are studying in content courses or to the historical moment they are living (e. g. an impacting or interesting news for which the students have shown interest).

Step 5: Selection of the appropriate reading passage

This is the process of choosing the most appropriate text. From all those texts on the same topic, it is important to choose the one that best fits the principles of authenticity and relevancy of content and tasks, background knowledge, strategy selection, and appearance. Johns suggests the following material design principles when choosing a text: authenticity, relevancy, purposefulness, transferability, exploitation of student background, task dependency, integration, challenge, and variability.

On the same line, Day proposes material designers to take into account seven factors to select appropriate EFL reading passages: interest, exploitability, readability (lexical knowledge, background knowledge, syntactic appropriateness, organization, discourse phenomena, length), topic, political appropriateness, cultural suitability, and appearance (layout, type size and font).

When selecting the texts Hutchinson and Water's model suggests three criteria to take into account: the text has to be an authentic piece of communication (but adaptation or re-writing could be considered if needed), it will match the student's interests and needs, and it will provide information to generate valuable classroom activities (See table 1).

Step 6: Specification of tasks

According to Hutchinson and Waters, the tasks have to be decided in accordance to the syllabus specifications, to the material chosen and the objectives proposed for the lesson. The instructor

should link any language tasks necessary for the comprehension or production of the material with criterion tasks that the student perceives as useful for their needs and interests[13]. The students can use the new information learned to apply it to information from other sources. The tasks can be written, oral, or activity-based[14]. They could be used to teach or assess structure, vocabulary or content. According to the objectives proposed the tasks can be solved individually or collaboratively. The tasks should encourage students to take responsibility of their own learning; in this way they will focus not only on the product, but also on the process of the tasks[15]. In general terms, the teacher should select the activities according to time constraints, lesson objectives, course outcomes, the learners' interests and needs, previous knowledge, proficiency levels, etc.[16] (See table).

Step 7: Development of instructional materials

The process of design starts. At this point the designer has to consider aspects such as interest, authenticity, and relevancy to design the tasks that will provide a stimulus for learning, and opportunities for active involvement. The tasks should be varied and challenging, and should allow the learner to work at his/her own pace and ability. The tasks should be linked to the criterion tasks the students need. In regards to content, the material should be conceptually complete and should provide clarity of discourse. It has to be at the syntactic, lexical and content level of the student. In relation to appearance, it should be motivating. If possible, it should have drawings, tables, figures, charts,

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13. M. Shih, «Beyond Comprehension Exercises in the ESL Academic Reading Class», *Tesol Quarterly*, 26 (2) (1992) 289-311.

14. M. Shih, *op. cit.*

15. L. Smolen, C. Newman, T. Wathen and D. Lee, «Developing Student Self-Assessment Strategies», *TESOL Journal*, 5 (1) (1995) 22-27.

16. F. L. Stoller, «Making the Most of a News Magazine Passage for Reading-Skills Development», *English Teaching Forum,* 32 (1) (1994) 2-7.

pictures, or any other visual information. The font and size of the letters as well as the length of the text should be adequate. The material should also help organize the teaching-learning process. It must be immersed in a curriculum, a syllabus, a view of the nature of language, and a view of the nature of language learning.

Step 8: Piloting of instructional materials

This is a trial use of the material in an actual teaching situation. The setting should be as similar as the intended situation. This will give the designer a truer picture of the validity of the material.

Step 9: Evaluation of the material

Try the materials in the classroom[17]. The designer can evaluate the material in several ways: s/he can use a checklist of the points to be evaluated, interviews, observations, questionnaires, or a think aloud process that the teacher records. A careful analysis of the data should follow to describe the value and/or flaws of the material. This data is provided by the students or users, instructors and whoever is involved in the teaching-learning process.

Step 10: Revision of the materials as needed

If the material has no flaws, it is used as it is. If the material needs improvement, the designer reviews it and redesigns it. If the results of the evaluation of the material are very negative, the material is discarded.

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17. Hutchinson and Waters, *op. cit.*

TABLE 1(A): PRINCIPLES FOR MATERIAL DESIGN

- materials
  - have authenticity
  - have relevancy
  - have purposefulness
  - have transferability
  - have exploitation of students' background
  - have task dependency
  - have integration
  - have challenge
  - have variability
  - are interesting
  - have exploitability (facilitates learning and allows teachers to achieve their objectives)
  - have readability (lexical knowledge, background knowledge, syntactic appropriateness, organization, discourse phenomena, length)
  - have a topic
  - have political appropriateness
  - have cultural suitability
  - have appearance (layout, type size and font)
  - allow students to work at their capacity
  - present content as not too easy, too difficult or too predictable
  - engage the whole brain, the body and the emotional state
  - supply active learning
  - have lexical and syntactic complexity
  - have depth of ideas and information
  - have clarity of discourse
  - have complexity of point of view
  - provide a stimulus to learning
  - help to organize the teaching-learning process
  - are immersed in a view of the nature of language and language learning

Sources: Johns, 1985; Smetana and Whitacre, 1991; Day, 1994; Nuttal 1982; Hirsch and Gabbay, 1995; Hutchinson and Waters, 1987.

TABLE 1(B): PRINCIPLES FOR MATERIAL DESIGN

> ǫ reflect the nature of the learning task
> ǫ introduce teachers to new techniques
> ǫ provide models of correct and appropriate language use

Source: Hutchinson and Waters, 1987.

TABLE 2 (A): TASKS

- Guide and assess learning through tasks
- Use oral tasks such as class discussion, oral presentations, panel discussions, and role playing
- Include written tasks such as quizzes, exams, essays, and research papers
- Include activity-based tasks such as observations, and laboratories
- Analyze texts and handouts, tasks carried out by the students, observe students and class sessions, and interview students in their content courses to choose the criterion tasks they need
- Do not force a task if the reading is not adequate
- The students' thinking process should be focused on the general meaning of the text and not on skills
- Provide challenging tasks like the ones students will find in real contexts
- Prepare tasks that require the use of different sources of information to solve it
- Prepare tasks in which there is not just one correct answer
- Prepare exercises that are unpredictable, so that students learn how to solve ambiguity in the tasks and in the answers or results
- Provide the necessary skills to solve the tasks
- Provide tasks that make students work independently, in groups and cooperatively
- Use student-managed portfolios to involve the student actively in the learning process
- Prepare tasks that teach students how to learn metacognitive skills to develop self-knowledge, self-awareness, higher-order thinking
- Prepare exercises arranged hierarchically according to difficulty so that the student do as much as s/he is able to
- Be flexible with the use of exercises

Sources: Shih, 1992; Clarke and Silberstein, 1977; Johns, 1985; Smolen, Newman, Wathen and Lee, 1995; Graves, 1992.

TABLE 2 (B): TASKS

- Have the students take responsibility of their own learning. They must be able to judge their own work to decide what has to be improved and what comes next
- The tasks should encourage students to place emphasis not just on the product but also in the process

Source: Smolen, Newman, Wathen and Lee, 1995.

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