

UNIVERSIDADE FEDERAL DE SANTA CATARINA
PÓS-GRADUAÇÃO EM LETRAS – INGLÊS

AN ANALYSIS OF TEXTS AND TASKS
IN ESAP TEXTBOOKS FOR COMPUTING

Por

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Dedico este trabalho
a meus pais, Gustavo (*in memoriam*) e Elza,
pelo exemplo de vida, fé e coragem que me transmitiram;
ao meu marido, Ricardo, pelo amor e companheirismo em
cada momento dessa caminhada e aos meus filhos,
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ABSTRACT**An Analysis of Texts and Tasks
in ESAP Textbooks for Computing****Leticia Zimmer Rebelo****Universidade Federal de Santa Catarina****2003****Supervising Professor: Dr. Lêda Maria Braga Tomitch**

In recent years there has been a growing demand for English for Specific Academic Purposes (ESAP) teachers in the state of Santa Catarina, Brazil, due to the fact that new undergraduate courses in the computing area are being implemented. As materials selection and evaluation are an important part of their job, they need to be able to identify and choose suitable materials for the teaching of ESAP, especially to undergraduate students in Information Systems courses. Therefore, in order to contribute to research in this area, this study had as its main objective to identify the text topics, text types and tasks present in ESAP textbooks. This study was carried out in two parts. The first part involved the selection of four ESAP textbooks in the computing area and the use of checklists to identify if the topics presented in these books matched those graded and suggested by Information Systems undergraduate students and teachers from two tertiary level institutions, in Santa Catarina (Associação Educacional Leonardo Da Vinci – ASSELEVI and Faculdade Estácio de Sá). In the second part, an internal and external evaluation using McDonough and Shaw's working model (1993) was applied as a means of helping in the identification of the types of texts and the types of tasks present in the selected materials according to a framework proposed by Davies (1995). In relation to the topics found, the analysis of the data showed that most of the topics graded as relevant by the participants were present in the selected textbooks and that they may contribute to motivate reading as they are mainly connected to the students' area of specialization. In relation to the text types in each textbook analyzed, mainly informative texts were identified, hence the type of text students will probably find in their professional lives and which may contribute to motivate reading. In relation to the types of tasks, the analysis of the selected units in the textbooks showed the predominance of 'active' reading tasks, confirming the findings in Ferreira's study (2003). Additionally, taking these results into consideration the researcher has tried to establish a relationship between the types of texts and tasks present in the textbooks and learner's independence based on the relevant literature in this area. The analysis points to the possibility that these materials may be considered appropriate to the teaching of

ESAP to Information Systems undergraduate students and could possibly be used by teachers as a means to foster independent learning.

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RESUMO**Uma Análise de Textos e Atividades
em Livros de Inglês Acadêmico Instrumental para Computação****Leticia Zimmer Rebelo****Universidade Federal de Santa Catarina****2003****Professora Orientadora: Dra. Lêda Maria Braga Tomitch**

Devido à implementação de novos cursos de graduação na área de computação, tem-se percebido nos últimos anos uma demanda crescente de professores de Inglês Acadêmico Instrumental (ESAP) no estado de Santa Catarina, Brasil. Como a seleção e avaliação de materiais são uma parte importante do trabalho destes professores, eles precisam ser capazes de identificar e escolher materiais apropriados ao ensino de Inglês Acadêmico Instrumental, especialmente para os alunos do curso de graduação em Sistemas de Informação. Assim sendo, com o intuito de contribuir com a pesquisa nesta área, este estudo teve como objetivo identificar os tópicos dos textos, os tipos de textos e as atividades presentes em livros de Inglês Acadêmico Instrumental. O estudo foi conduzido em duas partes. A primeira parte envolveu a seleção de quatro livros da área de computação para o ensino de Inglês Acadêmico Instrumental e a utilização de *checklists* para identificar se os tópicos apresentados nestes livros estavam de acordo com aqueles escolhidos e sugeridos pelos alunos e professores do curso de Sistemas de Informação, em duas instituições de nível terciário, em Santa Catarina (Associação Educacional Leonardo Da Vinci – ASSEVI e Faculdade Estácio de Sá). Na segunda parte, uma avaliação interna e externa utilizando o modelo de McDonough and Shaw (1993) foi aplicada como forma de ajudar na identificação dos tipos de textos e atividades presentes no material selecionado e conforme o modelo proposto por Davies (1995). Com relação aos tópicos encontrados, a análise dos dados mostrou que a maioria dos tópicos escolhidos como relevante pelos participantes estavam presentes nos livros selecionados e que poderiam contribuir para motivar a leitura, haja vista estarem diretamente relacionados à área de especialização destes alunos. Com referência aos tipos de texto analisados em cada livro, foram identificados principalmente textos informativos, provavelmente o tipo de texto que os estudantes encontrarão em sua vida profissional e que pode contribuir para motivar a leitura. Com relação aos tipos de atividades, a análise das unidades selecionadas nos livros mostrou a predominância de atividades ‘ativas’, confirmando os resultados do estudo de Ferreira (2003). Adicionalmente, considerando-se estes resultados, a pesquisadora tentou

estabelecer uma relação entre os tipos de textos e atividades presentes nos livros e a independência do aprendiz com base na literatura pertinente nesta área. A análise aponta para a possibilidade de que estes materiais possam ser considerados apropriados ao ensino de ESAP para estudantes do curso de graduação em Sistemas de Informação e que poderiam possivelmente ser utilizados pelos professores como um meio para promover o aprendizado independente.

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CHAPTER ONE

INTRODUCTION

1.0 Preliminaries

Two main reasons have contributed to the emergence of this study. The first one came from the researcher's personal experience with the teaching of English for Specific Academic Purposes (ESAP) to undergraduate students of the Information Systems course at Associação Educacional Leonardo Da Vinci (ASSELVI), in Santa Catarina, Brazil. As it happens with most ESAP teachers in Brazil, and elsewhere, their teaching background is usually general English. Therefore, as these teachers try to adapt to this 'new' reality they are overwhelmed by all sorts of questions related to their teaching practice. Some of these questions were my first reason for carrying out this research, finding answers that could help ESAP teachers to cope with this 'new environment' became the second one. Consequently, the Master's course was the most appropriate direction to take in order to attempt to answer these questions. The most relevant ones form the basis of this research and will be presented as part of this chapter.

1.1 An Overview of Information Systems Undergraduate Courses in Santa Catarina

At the present time, eleven tertiary level institutions in the state of Santa Catarina – Brazil – provide Information Systems undergraduate courses. This includes the Federal University of Santa Catarina (UFSC), eight institutions which belong to the

system of Educational Foundations in Santa Catarina (ACAFE) and at least two private institutions: Associação Educacional Leonardo Da Vinci (ASSELVI) and Faculdade Estácio de Sá, offering a total of 23 courses in 22 cities. In each city, where these institutions have a campus, between 30 and 50 freshmen are enrolled each semester. This means about one thousand students per semester, approximately two thousand a year.

Most of these courses started two or three years ago. The course offered at Associação Educacional Leonardo Da Vinci is probably the oldest, due to the fact that its first semester began with the implementation of the institution, in February 1999. This sudden expansion has occurred as a result of the policy of the Brazilian Ministry of Education favoring the emergence of new tertiary level institutions and the advent of new undergraduate courses.

Additionally, the Information Systems undergraduate course came probably to fill a gap in the market. Thus, the profile of the Information Systems professional is different from that of the existing undergraduate in Computer Sciences. The former professional uses computing as a means, while the latter uses it as an end activity. For instance, the Information Systems course allows students *to use technology for the adequate treatment of information, in companies and organizations, with the help of the computer* (my translation) (from the World Wide Web: <http://cursos.furb.br/ccen/si/index.html>).

Furthermore, ESAP is present in the curriculum of most of these Information Systems undergraduate courses. Nevertheless, the amount of classes varies and depending on the institution and its curriculum, students may have one or two classes per week. However, in some institutions ESAP is not part of the course curriculum

(Federal University of Santa Catarina - UFSC and Fundação Educacional de Brusque - FEBE).

In 1988, Nunes (1988) wrote about the rapid increase in the request for English for Specific Purposes (ESP) courses at college level, especially in the areas of science and technology. Thus, it is possible to assume that this demand is still taking place especially with the advent of courses such as the Information Systems course. The current number of institutions offering this course shows its acceptance and, undoubtedly, has opened space for the teaching of ESAP in Santa Catarina. Therefore, as more teachers are given the opportunity of teaching ESAP to Information Systems undergraduate students the demands related to this teaching and learning situation will appear.

Having these teachers' situation in mind and considering that materials selection would be part of their responsibility constituted one of the researcher's reasons for conducting this work.

1.2 Context of Investigation

The organization and the development of the Brazilian National ESP Project played an important part in the teaching of ESAP in Brazil. Through this Project researchers were able to identify that the demand for English in Brazilian universities was particularly related to the reading skill (Deyes, 1984). Despite the fact that some reading materials and exercises were prepared by those involved with the Project (Celani et al., 1988), the production of a Brazilian ESP textbook was not their aim (Holmes, 2000). Thus, in order to teach reading to undergraduate students ESAP teachers had to resort to materials published abroad, to adapt them or write their own

materials. A probable result of the latter has been the publication of some of this material, confirming an assumption made by Robinson (1991). Therefore, ESAP teachers' involvement in the processes of materials selection and evaluation is not only part of their reality, but it is a key issue for the success of their courses. However, the amount of published material available nowadays reveals how demanding this task can be.

1.3 Objectives of the study

This study has two objectives. The first is to identify if the text topics presented in the four selected ESAP textbooks in the computing area match the topics suggested and considered relevant by the undergraduate students and teachers from Information Systems courses in two distinct tertiary level institutions, in Santa Catarina. The second involves the analysis of some texts and tasks presented in the selected textbooks based on Davies's frameworks (1995) for the classification of different genres and for analyzing tasks (active and passive). Additionally, this study addresses two important issues: motivation and learner's autonomy in relation to the types of texts and tasks proposed in the selected textbooks.

Therefore, this work tries to answer the following research questions:

1. Do the topics presented in the selected textbooks match those graded and suggested by the students and professionals in the Information Systems undergraduate courses?
2. What types of text do the selected textbooks present?
3. What types of task do the selected textbooks propose?

4. In the light of the relevant literature, to what extent do the texts and tasks found in the selected textbooks foster independent learning?

1.4 Significance of the study

The recognition of reading as the most relevant skill in contexts where students need to deal with texts in their specialist field of study (MacDonough & Shaw, 1993) has stimulated many researchers to investigate various features connected with this issue. Therefore, teacher's methodology (Holmes, 2000; Denardi, 2002), course design (Maciel, Marmet & Celia, 1983), materials design (Nunes, 1988) and materials evaluation (Carvalho, 1989; Ferreira, 2003) are some of the aspects that have called researchers' attention. Consequently, as texts and tasks adopted by teachers in their classrooms and also presented in textbooks are the main tools to implement reading, they have been worth of closer investigation (Salm, 1999; Ferreira, 2003). This interest may demonstrate researchers' concern with the influence of these two elements in the development of the reading comprehension process. Thus, ESAP textbooks are an appropriate source for this kind of investigation. Following this view, the intention in this research is to give some helpful insights to ESAP teachers and students in the computing area as to identify text types and task types which best suit their teaching-learning styles and needs and also to bring some contributions into the research area of materials evaluation in ESAP.

1.5 Organization of the thesis

This study is organized into five chapters. Chapter one provides an overview of the Information Systems undergraduate courses in Santa Catarina – Brazil, the context of investigation, the objectives of the study and its significance and the four research questions. Chapter two reviews some of the literature on ESAP, materials evaluation, types of text and types of task (active and passive) and, learner's autonomy. In Chapter three the methodology used in this study is described. Chapter four deals with the analysis of data, the discussion and the presentation of results. And finally, Chapter five presents the final considerations, the limitations of the study, suggestions for further research and some pedagogical implications.

CHAPTER TWO

REVIEW OF THE LITERATURE

This chapter reviews the literature related to the advent of English for Specific Purposes and its structure, the contributions made by the Brazilian National ESP Project, the focus of the Project on reading, the development and the evaluation of reading materials involving the selection of text types and the description of active and passive tasks, and some of the aspects that can contribute to learner's independence.

2.1 English for Specific Purposes

Many well-known theorists and researchers have studied and described the developments of English for Specific Purposes. Among them are Hutchinson and Waters (1987) who state that the emergence of ESP was due to three factors: the demands of a brave new world, a revolution in linguistics and a focus on the learner. Dudley-Evans and St. John (1998) follow this view attributing to the general developments in the world economy, which have brought along the growth of science and technology, the increased use of English as the international language of science, technology and business, the increased economic power of certain oil-rich countries and the increased numbers of international students studying in the UK, USA and Australia as important contributions to the flourishing of ESP.

Nowadays, English for Specific Purposes has established itself as a major area in the field of TEFL/TESL and it has gained acceptance through the guiding principle: "Tell me what you need English for and I will tell you the English that you need"

(Hutchinson & Waters, 1987, p. 8). According to this idea ESP can be defined as “an approach to language teaching in which all decisions as to content and method are based on the learner’s reason for learning” (Hutchinson & Waters, 1987, p. 19).

As a consequence, two major branches have emerged and prospered. They were identified as English for Occupational Purposes (EOP) and English for Academic Purposes (EAP) (Robinson, 1991; Dudley-Evans & St. John, 1998; Hutchinson & Waters, 1987; Jordan, 1997). New divisions of these two branches have occurred and in the case of EAP two important strands: English for General Academic Purposes (EGAP) and English for Specific Academic Purposes (ESAP) are described by Blue (1988a, as cited in Jordan, 1997). Next, I will provide a more detailed view of these micro-divisions, as I believe they are pertinent to the scope of this study.

2.1.1 English for General Academic Purposes and English for Specific Academic Purposes

Even though this work concentrates on the area of English for Specific Academic Purposes, it is useful to present the distinction between English for Specific Academic Purposes and English for General Academic Purposes. According to Dudley-Evans and St. John (1998) “EGAP refers to the teaching of the skills and language that are common to all disciplines; ESAP refers to the teaching of the features that distinguish one discipline from others” (p. 41). Conversely, for Jordan (1997) what exactly distinguishes one specialty from the other is not clearly identifiable.

Some researchers have proposed and discussed the implications of four types of situation for the teaching of EAP. Among these implications, they suggest that in Brazil, for example, all tertiary level disciplines be taught in Brazilian Portuguese

although English may be important for auxiliary purposes (Dudley-Evans & St. John, 1998). Deyes (1984) also corroborates the use of Portuguese in teaching. Thus, combining this reality with the distinction made between EGAP and ESAP, the English teaching situation of undergraduate students at the Information Systems courses in Santa Catarina, perfectly fits into the features of ESAP courses. Therefore, I will turn to the Brazilian context describing the important contributions made by the Brazilian National ESP Project.

2.2 The Brazilian ESP Project

The Brazilian National ESP Project, involving twenty universities, started in 1980 and gave priority to materials preparation, the creation of a national resource center, and the development of research and teacher education (Celani, 1998). In 1986, twenty-four technical high schools joined the project. According to Celani (1998), the number of institutions grew and, in 1998 forty universities and thirty-four technical and non-technical secondary schools were part of the project, which had turned into a self-sustained programme.

In order to carry out this Project, in the early 1980's, 'Key English Language Teaching' (KELT) posts were assigned to the Federal University of Santa Catarina for materials production, and to the Catholic University of São Paulo for setting up a National Resource Center in addition to research and teacher training. These tasks were developed, in terms of finance and personnel, through the concurrent support of the Brazilian Ministry of Education and the British Council. In addition, the publication of a bulletin entitled "The ESPECIALIST" and national seminars held since the beginning of the

Project and immediately followed by local and regional seminars became viable (Deyes, 1984).

The interest and the involvement of the universities in the Project allowed the researchers to conclude that “**ESP** was the main type of teaching carried out in many English departments”, that “the largest number of courses were at **undergraduate level**” and that “in all universities the demand for English was specifically related to the **reading skill**” (Deyes, 1984, p. 4) [my emphasis].

Thus, as the Federal University of Santa Catarina was in charge of producing materials basically aimed at helping students develop reading skills in their specialist area, some experimental work was done in creating self-access materials and a ‘standard exercise’, which were first tried at the local university and then became accessible to the other participating universities (Celani et al., 1988). In spite of these results, it was not an aim of the Project the production of a Brazilian ESP textbook (Deyes, 1984; Celani, 1988; Holmes, 2000). It is the aspect of reading materials in ESP and the Project focus on reading that I will examine next.

2.2.1 The Focus on Reading

A claim made by McDonough and Shaw (1993) is that “reading is the most important foreign language skill, particularly in cases where students have to read English materials for their own specialist subject” (p. 101), and as Ferreira (2001) points out in her Dissertation Proposal “this is the research territory” (p. 10). These views are supported by Heberle (2000) as she acknowledges the prominence of reading in EFL teaching in Brazil, the amount and variety of publications in the area and the significant role of reading in many research programmes in Brazil.

Accordingly, Dudley-Evans and St. John (1998) state that “in South America, EAP has often been referred to as Technical English (Inglês Instrumental), and the courses have focused almost exclusively on reading” (p.40). St. John (1989) argues that ESP courses in the academic world are not predominantly concerned with writing but with reading as it is observed in many parts of the world, including Brazil.

To reinforce these assertions, reading has played a central role since the beginning of the Brazilian National ESP Project. The objective of the project was “to improve the use of English of Brazilian researchers, science teachers and technicians especially with regard to reading specialist and technical publications” (Celani, 1998, p.234). Thus, the result of needs analyses undertaken in universities all over the country has confirmed reading comprehension of academic texts as the objective of ESP courses in Brazil (Maciel, Marmet & Celia, 1983, p. 2). The Project, according to Deyes (1984), should focus on developing students’ reading strategies, as a means of enabling them to handle texts in their specialist area at levels of comprehension adequate to their needs.

Bejarano and Klein-Wohl (2000) have conducted an investigation of the use of verbalization of reading behavior in small groups as a means of improving foreign language comprehension. In their study, these authors sustain that research has demonstrated that “the skillful use of reading strategies, or strategic reading, improves reading comprehension in both L1 and L2” (p. 59). Other researchers in the area of instructional teaching have emphasized the relation between reading comprehension and the teaching of strategies (see Maes, 1999; Denardi, 2002). Additionally, according to Bejarano and Klein-Wohl (2000), direct instruction in comprehension strategies seems to help the reader to understand text and it is part of the cause for the development of independent and efficient learners.

Even though most of the previously mentioned research has been conducted in relation to teaching, either in EFL or ESP contexts, it is my contention that this emphasis on reading strategies is also present in the ESP materials analyzed in this study (the textbook *Reading Strategies for Computing* (Oliveira, 2000) is a noteworthy example, in this case). Jordan's (1997) assertion that a 'combined/integrated strategies/skills approach' is the foundation of most reading books reinforces this point (p. 144).

Moreover, as 'skills' and 'strategies' are two important terms connected to reading and which will frequently appear in this study, I believe that they should be looked at in more detail at this point. These terms have been used interchangeably in the field of reading (Tomitch, 2002; Bejarano & Klein-Wohl, 2000; Denardi, 2002). Tomitch (2002) presents the following distinction between skills and strategies:

The term skills is used to refer to more automatic reading processes like decoding and lexical access, whereas the term strategies encompasses processes like deciding to reread a text for clarification and extracting salient points to summarize the text (p. 3).

Then this author provides a crucial distinction between the two terms.

Skills are automatic, they happen without the reader's awareness, the reader only has conscious access to the final product (e.g. access to the meaning of a word), but not to how the process is executed; strategies, on the other hand, depend on the reader's action in order to achieve a specific goal (e.g. realizing that s/he has misunderstood something and deciding to take some action: reread or read further until the end of the paragraph) (p. 4).

Maes (1999) also presents a discussion of these two terms in her work as part of her review of the literature on strategic reading. Her view in relation to this issue is similar to that supported in Tomitch (2002), as she considers that skills are employed unconsciously despite the level of the process, while “strategies are those skills applied deliberately” (Maes, 1999, p. 20). The results of her work have shown that in Florianópolis Municipal Schools, teachers were not aware of the importance of reading comprehension and reading strategies and consequently, their students did not use strategies in order to comprehend a text as it was revealed by the students’ profile in relation to reading strategies.

Due to the fact that the development of student’s reading strategies was among the objectives of the Brazilian National ESP Project, bringing the distinction between strategies and skills becomes relevant to this research as their use can be linked with improvement of reading comprehension and consequently with learner’s autonomy. Moreover, as part of the Project’s concern was with teacher development and materials preparation this researcher assumes that ESAP teachers might use reading strategies as a criterion for materials selection and development, while material designers and writers should consider them as an important issue. Thus, reading materials and criteria for materials selection will be dealt with in the following section.

2.3 Reading Materials in English for Specific Purposes

Nunan (1988) points out that “materials are, in fact, an essential element within the curriculum, and do more than simply lubricate the wheels of learning” (p. 98). Therefore, “the ability to evaluate teaching materials effectively is an important professional activity for all EFL teachers” (McDonough & Shaw, 1993, p. 61). An

important issue is presented by Robinson (1980) as she affirms that, “the wealth of material available makes the task of an ESP course-leader who decides to choose a published textbook particularly difficult” (p. 1).

Rea-Dickins and Germaine (2001) define evaluation as “the means by which we can gain a better understanding of what is effective, what is less effective, and what appears to be of no use at all” (p. 255). In their work, they identify accountability, curriculum development and teachers self-development as the three main reasons for carrying out an evaluation and highlight that the focus of the evaluation has to be made clear by the evaluator. This focus can be on the classroom organization, the textbook, the way grammar is taught, the resources available to the teacher, etc. In this way, they offer some guidelines for the evaluation of classroom learning materials suggesting that it should be as comprehensive as possible. Harmer (2001), for instance, presents three types of materials evaluation: preliminary, summative and formative. He suggests that a preliminary materials evaluation is likely to happen before an ESP course starts and it comprises the selection of the most appropriate materials from the ones available.

Tracing the developments in ESP, Dudley-Evans and St. John (1998) provide an account of the various movements that have influenced the materials produced since ESP early years, which are Register Analysis, Rethorical and Discourse Analysis, the analysis of study skills and the analysis of learning needs. Additionally, they present a broader view of the evaluation process, which matches their definition of evaluation “as asking questions and acting on the responses” (p.128). In this manner, they suggest that learners are among the main sources for an evaluation and that checklists and questionnaires, assessment, discussion and record keeping are useful methods for conducting an evaluation. Another important point discussed by these authors is related to authenticity of text and authenticity of purpose. Nevertheless, in this study,

authenticity of text means “texts not written specifically to present, illustrate and/or exemplify a certain linguistic item” (Tomitch, 2000, p.84). This view has also been adopted by Rivas (1999) in her analysis of the reading component in ELT coursebooks.

Hutchinson and Waters (1987) view evaluation essentially as a matching process where the needs of the students or course have to be matched with existing solutions. They divide the evaluation process into four main steps: 1) defining criteria; 2) subjective analysis; 3) objective analysis; and 4) matching. While subjective analysis refers to the achievements of the criteria in relation to the course or students, objective analysis relates to how the materials being evaluated fulfill these criteria.

In order to carry out subjective and objective analyses these authors have developed a checklist of criteria and suggest that other criteria considered important by the evaluator may be added. This checklist, which is organized into questions, is divided into areas such as audience, aims, content, methodology, and other criteria. To exemplify this point, in relation to the category ‘aim’, they propose the use of the following questions “What are the aims of your course?” and “What are the aims of the material?” (p. 99), as part of the subjective and objective analyses, respectively. Although they assume that the evaluator’s choices will be made on subjective grounds, they highlight the importance of a balance between subjective and objective factors in the early stages of the process. Finally, it is their advice that the evaluation process “should be systematic and is best seen as a matching exercise” (Hutchinson & Waters, 1987, p. 105).

Shaw (1990) has proposed a micro (internal) and a macro (external) model for the evaluation of ESP materials. Equally, McDonough and Shaw (1993) suggest a working model for the evaluation of EFL textbooks, where a two-stage process, involving first ‘external evaluation’ and then ‘internal evaluation’, should be carried

out. While the former requires looking at table of contents, cover and introduction to obtain a general view of the materials, the latter consists of a closer and thorough evaluation, involving a more detailed look at two or more units.

According to McDonough and Shaw (1993), an external evaluation would mean checking the assertions made for the textbook by the author or publisher regarding the following criteria:

“the intended audience, the proficiency level, the context and presentation of language items, whether the materials are to be core or supplementary, the role and availability of a teacher’s book, the inclusion of a vocabulary list/index, the table of contents, the use of visuals and presentation, the cultural specificity of the materials, the provision of audio/video material and inclusion of tests” (p. 74).

On the other hand, for an internal evaluation the authors suggest the following criteria: the presentation of skills in the materials, the grading of the materials, the kinds of texts used, the arrangements for self-study, and the suitability of tests and exercises.

Even though there are similarities between the criteria in Hutchinson and Waters’ (1987) evaluation checklist and McDonough and Shaw’s (1993) model, for the purpose of this research the latter will be adopted as it has been a concern of the researcher not to use subjective factors in the analyses. The internal and external evaluation model proposed by McDonough and Shaw (1993), has also been used by Salm (1999) in her work on a discourse analysis of advertisements in Business English textbooks. Carvalho (1989), on the other hand, has adopted Hutchinson and Waters’ (1987) subjective and objective analyses framework in his evaluation of the ESP materials of the Federal University of Piauí.

Some important aspects that need to be considered in the choice of reading materials are related to the types of texts and tasks and their function within the

teaching-learning process in ESP. Therefore, these aspects will be covered in the next sub-sections.

2.3.1 Types of Texts

Davies (1995) shows the importance of text as she dedicates a whole chapter in her book *Introducing Reading* to the description and analysis of text. She argues that important factors such as the motivation to read, the approach to reading and the type of reading adopted can be highly affected by texts and tasks. For the purpose of this research, text is viewed as “any written record of a **communicative event**”, thus “the event itself may involve oral language (for example, a sermon, a casual conversation, a shopping transaction) or written language (a poem, a newspaper advertisement, a wall poster, a shopping list, a novel)” (Nunan, 1993, p. 6). To refer to texts van Dijk (1997, p.3) adopts the terms ‘written communication’ or ‘written interaction’.

St. John (1989) states that the selection of texts for courses has been an area of permanent concern. In her study, she presents some ideas on how a genre-based approach would influence the devise of reading courses and comments on how the focus of the text selection process has been on the subject specificity of texts. Her argument is that an understanding of text structure would liberate teachers from the problem of highly demanding topic content and the threat of subject explanations, bringing them back to the position of language guide and teacher (p. 177). Moreover, in the context of EFL teaching, research has shown that many factors influence the selection of reading texts for the EFL classroom and that as well as readability, authenticity and reader interest are among the criteria taken into consideration (Rivas, 1999).

St. John (1992) proposes a text selection checklist for a course developing skills and language for reading purposes. She divides this checklist into two parts. While the first part refers to four 'absolute' criteria (interest, value, exploitability and reproduction rights), the second part involves nine variable criteria and, depending on the course objectives, some criteria can be added and others left aside. These criteria are: text length, source of material, presence of visual aids, density of language, methodology, dating, thematisation of topics, text purpose and lesson purpose. In the ESP context, the importance of text types is clearly exemplified as Hutchinson and Waters (1987) present it as a criterion to be used when evaluating materials.

Harmer (2001) suggests that "we can describe different types of writing – in different contexts and for different purposes – as different genres" and that students exposed to and made aware of the patterns of each genre "will be in a much better position to understand what they read" and in practical terms will be able "to read and write with greater understanding of how such texts are constructed" (p.27). According to Dudley-Evans and St. John (1998) "genre refers to a text-type that has developed in response to a social or professional need" (p. xiv) and this definition meets the purpose of this study. In a similar way, Pappas (1997) discussing genre and learning to read asserts that, "genres are text types that reflect a culture's way of saying" (p. 285).

To introduce three essential elements in reading comprehension Grellet (1981) poses the following questions: 'What do we read?', 'Why do we read?' and 'How do we read?'. Therefore, in order to answer the first question Grellet (1981) lists the main text-types people usually encounter. The text-types she suggests are: 1) novels, short stories, tales; other literary texts and passages (e.g. essays, diaries, anecdotes, biographies); 2) Plays; 3) Poems, limericks, nursery rhymes; 4) Letters, postcards, telegrams, notes; 5) Newspaper and magazines (headlines, articles, editorials, letters to the editor, stop press,

classified ads, weather forecast, radio/TV/theatre programmes); 6) Specialized articles, reports, reviews, essays, business letters, summaries, précis, accounts, pamphlets (political and others); 7) Handbooks, guidebooks, textbooks; 8) Recipes; 9) Advertisements, travel brochures, catalogues; 10) Puzzles, problems, rules for games; 11) Instructions (e.g. warnings), directions (e.g. How to use), notices, rules and regulations, posters, signs (e.g. road signs), forms (e.g. application forms, landing cards), graffiti, menus, price lists, tickets; 12) Comic strips, cartoons and caricatures, legends (of maps, pictures); 13) Statistics, diagrams, flow / pie charts, timetables, maps; and 14) Telephone directories, dictionaries, phrasebooks.

Grellet's (1981) questions bring back Davies's (1995) argument on the influence of text and task in the approach to reading, the motivation to read, and the type of reading adopted, which were presented at the beginning of this section. Moreover, her classification of texts can also be compared to that proposed by Davies (1995), who suggests a classification of different genres through reference to the major social function of the text and reader purpose. She classifies genres into Instructional, Informative (Genres for Study Purposes and Genres for Evaluation/Assessment), Persuasive, Literary/Poetic (Genres for Study and Genres for Evaluation/Assessment), Popular/Entertainment and Social Interaction. For each class she gives some examples, for instance, editorials, 'special offer' leaflets or notices as types of Persuasive genre; safety regulations, transport timetables, travel brochures and advertisements for jobs as Instructional genre; academic papers, textbooks across the curriculum, specialist journals as Informative genre (p. 130-131). From this it is possible to conclude that reading for learning, which appears to be the case of ESAP students, usually requires informative texts.

Topic is another important aspect of texts which is highly linked with motivation to read and which has been the focus of research in the area of ESP. In a discussion on the use of highly specialized texts, Hutchinson and Waters (1987) give support to the connection between the relevance of topics and motivation asserting that “learners may be more motivated by them, because they make the language seem more relevant” (p.161). For the purpose of this study, motivation is viewed as “some kind of internal drive which pushes someone to do things in order to achieve something” (Harmer, 2001, p.51).

Even though many researchers have presented arguments against a selection of texts based on the students’ specialist area, a considerable amount of research in the ESP area has demonstrated its validity. Zozzoli, Albuquerque and Santos (1999) express this view and show their concern with this issue “we do not intend to favour the idea that all texts brought to the classroom should have a direct relationship with the students’ life, but it is hoped that each reader’s preference and motivations are respected, so as to provide agreeable interactions during the reading task” (p. 100).

In Brazil, a complementary study developed by CEPRIIL (Centro de Pesquisas, Recursos e Informação em Leitura) at The Pontifical Catholic University of São Paulo has shown a connection between students’ receptivity to materials and their opinion in relation to the materials relevance to their area of specialization (Salm, 1999). Research conducted by Nunes (1988) with Biology and Nursing students at UFRJ, in Rio de Janeiro, has shown that what the three types of learners involved in the research (false beginners; intermediate and advanced students) had in common was a great interest in texts that provided them with new and relevant information about their area of study.

Carioni, Scott, Bayer, Zanatta and Quintanilha (1984) describe the implementation of an individualized ESP course for a group of 50 undergraduate

dentistry students at the Federal University of Santa Catarina. The course had the following characteristics: self-pacing, responsibility placed on the students' shoulders, choice of what texts to study, choice of texts for tests, freedom for the student to study where and when he or she wished. Through an evaluation of the interest in texts they found that "texts on the students' subject area were thought more interesting and were also more frequently chosen" (p. 68).

Leffa (1994) has carried out an experiment where participants were 22 undergraduate students taking an ESP course in Computer Sciences. They were selected from an original group of 68 students by means of a reading comprehension test and divided into two groups according to their scores: 1) students with scores higher than 90% were in the proficient group, and 2) students with scores lower than 40% in the non-proficient group. Then the eleven proficient readers were paired with the non-proficient. The non-proficient readers' task was to select an article and write a review of this article in Portuguese. The proficient readers should help the other group to select the article and solve comprehension problems. Additionally, proficient readers should write a complete diary describing everything that happened in their meetings with the non-proficient readers.

According to Leffa (1994), data from the diaries has shown that students had difficulties in selecting the articles, as they had skimmed over 200 articles. Excessive length, lack of interest in the topic, language difficulty, lack of knowledge about the topic, and use of technical jargon were the main reasons why the articles were rejected. The most significant criteria for the selection of the article were reader's interest in the topic and use of accessible language by the author.

Next, I will turn to the discussion of two distinct types of tasks.

2.3.2 Types of Tasks: Active or Passive

The emphasis on reading skills and the production of reading materials has brought special attention to the creation and design of tasks. In their discussion of ESP methodology, Hutchinson and Waters (1987) conclude that “it is the activity that counts: ‘I do and I understand’” (p. 142). Although these authors were discussing methodology and not referring exclusively to reading tasks, research has demonstrated that teachers and materials writers/designers are becoming more aware of the important role that reading tasks play in learning. Showing the importance of tasks Just and Carpenter (1987) state that “the confluence of the text, the task, and the reading goals have a strong influence over what is learned during reading” and that “what is learned depends on the learning task” (p.404).

ESP teaching and learning has developed favoring the adoption of different types of tasks, as this is an influential factor in motivating learners and necessary if different skills are to be dealt with (Grellet, 1981). This has also occurred due to the use of different types of texts in ESP and their connection with different reading purposes. Hence, “exercises must be meaningful and correspond as often as possible to what one is expected to do with the text” (Grellet, 1981, p. 9). For Grellet (1981) texts should be the basis for the creation of exercises as opposed to enforcing an exercise on a text. Therefore, her suggestion is that questions and activities should vary according to the type of text studied and learner’s reading purpose.

Davies (1995) has proposed a helpful framework which has been used for the analysis of tasks and according to which activities can be described as of two types: active or passive. The latter favors the bottom-up model of reading where readers are

not encouraged to interact analytically with the text to fulfill the task. As Tomitch (2000) asserts, in passive tasks, readers do not need to go beyond the surface level.

According to Davies (1995, p.143) passive tasks usually involve individual silent reading and include:

multiple-choice exercises

comprehension questions

gap completion exercises

true/false questions

vocabulary study, for example, find the synonyms/antonyms

dictionary study

‘speed’ reading

renumbering of sections of text on page.

Active reading tasks, on the other hand, encourage readers to adopt an interactive model of reading, where readers must get involved in the reading process in order “to build a complete and coherent mental representation of text’s content” (Tomitch, 2000, p. 83), as a consequence “*comprehension* ... opens up a perspective on psychological text-processing mechanisms” (McDonough & Shaw, 1993, p 58).

Two lists of active reading tasks are presented in Davies (1995). On the first list the following activities appear: marking/highlighting of text targets; modified cloze; diagram completion/construction; table completion/construction; labeling of text and/or diagram; sequencing of cut-up units of a text; and prediction. The teacher gives students the aims and the frameworks for these activities, which are based upon the teacher’s analysis of the text. In addition, this normally implies in students doing the activities in pairs or in groups. In the subsequent list, students working individually receive the guidelines for the activities from the teacher. Diagram completion/construction; review

of book; table completion/construction; précis/ summary; recall; and, note making are the activities that belong to this list.

In addition, Davies (1995) underlines that active tasks are an essential alternative to more traditional tasks, such as multiple-choice exercises, since recent research has questioned the validity of these traditional types of exercises as measures of comprehension. She suggests that active reading tasks present the following features: 1 – they make use of authentic material; 2 – reading is contextualized; 3 - these tasks provide the student with a framework to process and analyze the text; 4 – they often involve an oral reading of the text followed by silent reading and rereading; 5 – they favor students interaction with text and with peers; 6 – they enable students to approach text in an analytical way instead of using it as a means to answer specific questions; and 7 – they often imply in the transfer of information from text to some sort of diagram .

Due to these features, active reading tasks modify the nature of students' interaction with texts. According to Davies (1995), these modified attitudes towards the text occur in the following ways:

- students make their hypotheses explicit;
- hypotheses are evaluated by other students and checked against the text;
- there is discussion about alternative interpretations;
- students ask questions about what they do not know instead of answering questions in which they know the answers or which may be seen to be irrelevant;
- if necessary, the teacher can adopt a role of informant rather than inquisitor;
- students learn to be critical in their reading of a text (p. 144).

Many scholars have studied the role different types of tasks play either in the classroom or in EFL/ESL textbooks. Hence, research conducted in EFL/ESL textbooks

has shown the predominance of passive reading tasks (Tomitch, 2000). These reading tasks are comprehension questions, true–false statements and multiple-choice exercises and according to Tomitch (2000), there are some disadvantages in using them as the sole source of classroom activity. Firstly, they tend to develop in readers a passive approach to reading, usually leading them to employ one mode of processing, the bottom-up, which, as a consequence, does not allow these readers to construct a complete and coherent mental representation of the text. Secondly, these reading tasks do not explore the use of strategies, thus hindering the development of a strategic reader. Lastly, it is important that teachers bear in mind that the best way of catering for their learners' different learning styles is through the use of varied activities (Tomitch, 2000).

Another research carried out by Nóbrega (2002) has studied the role of EFL teachers in reading classes in Florianópolis public schools in order to analyze their procedures and as a means of establishing what kind of response they motivated in their students. In relation to tasks, her purpose was to identify what kind of reading tasks these teachers applied to the texts used in their classes. Her results have shown that teachers tend to use more passive than active reading tasks and that they favor the use of literal and referential questions in their lessons.

Nevertheless, research in ESAP textbooks reveals a completely different result from the one obtained in EFL/ESL textbooks. Ferreira (2003) has examined the types of reading tasks encountered in three units of six ESAP textbooks. In her study, results have shown that active reading tasks were the predominant type of tasks in the eighteen units selected from the six textbooks. She has also found out through the analysis of tasks that, “the limit between what Davies (1995) encompasses as ‘passive’ and ‘active’ is not very well delineated” (p. 53) and thus she suggests that a ‘continuum’ would best

accommodate these types of tasks. A clear example that she gives of her findings is the true-false exercises classified by Davies (1995) as passive tasks. Ferreira's (2003) argument is that there are degrees of 'passiveness' and even a true-false exercise can become less passive if students are asked to justify their position. Reviewing her findings, she asserts that the textbooks' authors "appear to be aware of current developments on reading tasks" (p. 69) confirming what has been emphasized at the beginning of this section.

An assumption made by Silberstein (1994) and which is mentioned in this thesis is that "if students are to become independent language users they will need to experience a range of reading tasks corresponding to the kinds of reading they intend in the target language" (p. 11). Learner's independence will be examined in the following section.

2.4 The Focus on Learner's Independence

Learner's independence has become an important issue in the past decades and it has called the attention of many researchers. Littlewood (1996) explains that the popularity of this issue is related to leading pedagogical preoccupations, as follows: the active involvement of learners seen as requirement for language learning; the introduction of learner-centered methodology, and the teachers' aim at assisting their students to become independent in the use of language and learning. In this way, Dickinson (1994) suggests that many teachers understand that it is advantageous that students become independent of teachers and teaching and become capable of seeking their own learning projects autonomously.

In relation to terminology, the term autonomy frequently appears and it is used when referring to learner's independence and vice-versa. Many researchers have focused their work on these topics. While some present a broader view of autonomy as they are more concerned with defining 'an autonomous person' "as one who has an independent capacity to make and carry out the choices which govern his or her actions" (Littlewood, 1996, p. 428), others, like Dickinson (1994) present their view of autonomy connected to classroom-based teaching and are concerned, on the other hand, with the definition of 'an autonomous learner' "one who has undertaken the responsibility for his own learning" (p. 4). As the scope of independence in this work is narrower, mainly bound to the context of ESAP teaching, I believe that choosing the second view is more appropriate. I assume that although some textbooks can be used by students working on their own, research indicates that they can be more effectively used by teachers as a means of helping their students become autonomous readers and, consequently, learners.

In fact, "autonomy needs to be learned" (Dickinson, 1994, p. 7) which shows the essential role of the teacher in helping students to learn it. Therefore, Dickinson (1994) suggests four ways through which teachers can promote learners' independence: 1) by showing that teachers view learners' independence positively, approving and encouraging students to make decisions on their own; 2) by showing through gradual classroom work that students are capable of greater autonomy in learning; 3) by providing more opportunities for students to exercise their independence; and 4) by helping students to develop learning strategies. This last suggestion may be linked with the development of reading strategies, which should be the focus of ESAP reading classes; together with the previous suggestions, it seems possible to assume that these students can become independent readers and learners.

Similarly, Ryan (1991, as cited by Littlewood, 1999, p.75) agrees that an ‘interpersonal environment’ provides a basis for a more effective development of autonomy and presents four factors that help construct this environment: concrete support through the supply of help and resources; involvement and personal consideration from significant others; opportunities for making choices; and independence from a feeling of being controlled.

In this way, teachers should guide their students and use reading texts and tasks as resources, thus allowing them to become independent. As Nunan (1988) points out “as the focus will be on assisting learners to do in class what they will need to be able to do outside, materials should reflect the outside world” and “should also foster independent learning by raising the consciousness of the learners and making them more aware of the learning process” (p. 99).

Widdowson (1994) reinforces the role of materials as he states that, “ the design of tasks is essentially the creation of contextual conditions in the classroom which are specifically appropriate to develop learning autonomy, a gradual acceptance of the responsibility for learning” (p. 393). For Hutchinson and Waters (1987) “materials provide a stimulus to learning” and “good materials do not teach: they encourage learners to learn” (p. 107). Therefore, as materials can help learners to develop learning, these materials can give them confidence to open their own way towards learning independence. Grellet (1981) believes that “the students must be taught how to approach and consider the text in order to become independent and efficient readers” (p. 9).

As a means of closing this chapter I would like to use Absy’s (1994) work to make an analogy between the two types of learning strategies she has investigated and the main topic of this section – learner’s autonomy. Absy (1994) investigated the use of two learning strategies by ESL college students in their approach to text comprehension:

resourcing and elaboration. While the former refers to the use of materials to find the information needed to complete a task, the latter means making associations through the use of textual material and previously acquired knowledge. Although she has obtained important results in her study, I would like to focus on these two strategies to imagine the students 'resourcing' to materials (textbooks) as they walk towards independence, but actually never forgetting the importance of actively bringing their own contributions and knowledge to this process in order to achieve autonomy.

CHAPTER THREE

METHOD

This chapter introduces the participants involved in the research (students and teachers of Information Systems undergraduate courses) and describes how the research was carried out. In this section, information concerning participants' (students and teachers) background is presented. In the data collection section, the instruments and the procedures used in the research are described.

3.1 Participants

The participants in this study were 40 undergraduate students and 7 teachers from the Information Systems Course at Associação Educacional Leonardo Da Vinci, in Indaial, and 34 undergraduate students and 7 teachers from the Information Systems course at Faculdade Estácio de Sá, in São José, both in the State of Santa Catarina, Brazil. Participants were not given a questionnaire containing biographical questions, since this type of information would not influence the results of the present study. For this reason, participants' age and sex is not mentioned in this study.

3.1.1 Students

The students who took part in this study came from two distinct institutions: Associação Educacional Leonardo Da Vinci and Faculdade Estácio de Sá and were from different semesters, namely the 7th semester in the case of the former and the 3rd

and 4th semesters in the case of the latter. There were two 7th semester groups, one 3rd semester group and one 4th semester group, respectively. The students completed the checklist described in section 3.2 (see Appendix A) prepared for this study.

These students were chosen following two criteria, which were set to try to guarantee a maximum view of course subjects in Information Systems and a minimum of a semester of English for Specific Academic Purposes (ESAP). These criteria were: 1– the students had to be in the 7th semester at Associação Educacional Leonardo Da Vinci and in the 3rd and 4th semesters at Faculdade Estácio de Sá due to the fact that these were the most advanced semesters in the Information Systems undergraduate courses in each institution; 2– the students should have had an English for Specific Academic Purposes course as part of their course curriculum. In the case of the students from Associação Educacional Leonardo Da Vinci they had taken their English for Specific Academic Purposes course in the second semester, while the students from Faculdade Estácio de Sá had taken it in the third semester.

3.1.2 Teachers

Fourteen teachers from the Information Systems Courses in the two distinct tertiary institutions participated in the study. Seven teachers from Associação Educacional Leonardo Da Vinci and seven from Faculdade Estácio de Sá. These teachers taught different subjects that are part of the Information Systems course curriculum in each institution.

Even though the 26 teachers in the Information Systems undergraduate course at Associação Educacional Leonardo Da Vinci received the same checklist, only 7

teachers completed and returned it. Similarly, at Faculdade Estácio de Sá, 30 teachers received the checklist and only 7 of them completed and returned their checklists.

3.2 Data Collection and Procedures

3.2.1 Instruments

Data collection was made through a checklist organized by me, with my advisor's help (see Appendix A). The checklist contained 17 reading topics related to the computing area and were taken randomly from the following subject-specific books:

1. Basic English for Computing, Glendinning, E. H. and McEwan, J. (1999). Oxford: Oxford University Press.
2. Infotech – English for computer users. Esteras, S. R. (1999). Cambridge: Cambridge University Press.
3. Inglês.com.textos para Informática, Cruz, D. T., Silva, A. V. and Rosas, M. (2001). Salvador: Universidade Federal da Bahia.
4. Reading Strategies for Computing, Oliveira, S. (1998). Brasília: Editora UnB.

These books were chosen following three criteria, which were set to ensure that the topics listed in the checklists were related to the students' subject area. These criteria were: 1- Material that had been recently published (in the past five years); 2- Material produced and published in Brazil and material produced and published abroad; 3- Material that could be used by teachers and students in the Information Systems undergraduate course.

The checklist and the instructions were written in Portuguese and were applied to both teachers and students. Three lines were given at the end of the checklist where participants could add other topics. Next to each topic there was a number scale, from 1 to 6, where participants should indicate, by putting a tick or a cross in one of the numbers, the relevance of each topic. Number 1 stood for the most relevant topic and number 6 for the least relevant one. The objective of the checklist was to identify which reading topics were considered the most and the least relevant ones for the students and professionals in the Information Systems area.

3.2.2 Procedures

3.2.2.1 Students' Checklist

In order to have the checklist completed by the students and the teachers, the researcher asked the course coordinators' permission (in both institutions) to apply these materials to the students during their regular classes.

In relation to the students at Associação Educacional Leonardo Da Vinci, a teacher from the 7th semester allocated around 20 minutes of her class time, so that the researcher could introduce herself and her research, give oral instructions to the students, clarify any doubts and wait to collect the completed checklists. This procedure was carried out at the beginning of the classes in the two 7th semester groups on May 17th, 2002 (from 07:00 p.m. to 07:20 p.m. with the first group and from 08:40 p.m. to 09:00 p.m. with the second group).

A similar procedure was adopted at Faculdade Estácio de Sá, on June 27th, 2002, from 09:00 p.m. to 10:00 p.m., when the students from the 4th semester filled their

checklists. These students had come for an end of semester test and after being introduced to the researcher, received the oral instructions at the beginning of their class, answered their tests and had the rest of their class time to complete the checklists. The 3rd semester group also had an end of semester test on June 28th, 2002 – from 08:00 a.m. to 09:00 a.m., when the researcher came to apply the checklists and followed the same procedure described for the 4th semester.

3.2.2.2 Teachers' Checklist

In the case of teachers at Associação Educacional Leonardo Da Vinci, on May 17th, 2002, the researcher handed in some checklists and left others with a note giving a deadline (June 28th, 2002) in each of the Information Systems teachers' pigeon-holes. After answering their checklists, a total of 7 teachers returned them to the researcher.

Similarly, at Faculdade Estácio de Sá the checklists were left on June 28th, 2002 in the Information Systems teachers' pigeon-holes with an accompanying note. From the 30 checklists left, 7 were collected by the teacher of the 3rd semester group on July 3rd, 2002 and returned to the researcher.

3.2.3 Framework for Text Analysis

In order to identify the types of text and task present in the selected textbooks and carrying out a materials analysis, it is important to turn to the area of materials selection and evaluation. Thereby, the use of criteria checklists, mainly composed of headings and questions appears to be the most accepted way of accomplishing these processes.

This study will adopt a 'working model' proposed by McDonough and Shaw (1993), which divides the evaluation process into two parts: an external and an internal evaluation. The first stage will involve a more general evaluation of each textbook in terms of level of English, selection of skills, and the amount and distribution of reading units and texts, whereas for the second stage some specific aspects in the units chosen at random will be analyzed.

For this purpose, authenticity, text size, and text types are the contemplated features in units 4 and 14 in the selected textbooks. As part of the analysis, possible explanations for the authors' choice of text size will be presented. As a means of identifying text types; Davies's (1995) classification of genres as instructional, informative, persuasive, literary/poetic, popular/entertainment or social interactions (p. 130-131) will be adopted. Basically, her classification refers to primary social function and reader purpose. Based on her assumption that reading purpose and text are closely related, for practical reasons potential texts for an internal evaluation are those used in the textbooks exclusively for reading purposes (Davies, 1995, p. 132), for instance, texts connected to reading tasks or activities and texts which are many times identified by the authors of the selected textbooks under the headings 'reading' or 'text'.

CHAPTER FOUR

RESULTS AND DISCUSSION

This chapter presents and analyzes the results obtained in this study. In order to organize the discussion, the results are shown as the research questions are answered. The data obtained are a result of the answers to the students' and teachers' checklists. The research questions posed in this study are: 1. Do the topics presented in the selected textbooks match those graded and suggested by the students and professionals in the Information Systems undergraduate courses? 2. What types of text do the selected textbooks present? 3. What types of task do the selected textbooks propose? 4. In the light of the relevant literature, to what extent do the texts and tasks found in the selected textbooks foster independent learning?

4.1. 1 Do the Topics Presented in the Selected Textbooks Match Those Graded and Suggested by the Students and Professionals in the Information Systems Undergraduate Courses?

Before analyzing the data, it is important to remember that the participants in this research were undergraduate students from different semesters of the Information Systems undergraduate courses from two different institutions, namely Faculdade Estácio de Sá, in São José and Associação Educacional Leonardo Da Vinci, in Indaial. There were 16 students from the third semester and 18 students from the fourth semester at Faculdade Estácio de Sá participating in the research and two seventh semester groups, with 20 students each, at Associação Educacional Leonardo Da Vinci.

Additionally, there were seven teachers from each institution participating in the research, who taught different subjects.

The criterion for the selection of the most relevant topics for the students and professionals in the Information Systems undergraduate courses is underpinned by a classification of the topics into three categories of relevance: high, medium and low, as perceived by students and teachers. These categories are based on the grouping of grades used in the checklist, where grades 1 – 2 stood for the most relevant topics; 3 – 4 for the medium relevant topics and 5 – 6 for the least relevant topics. Results are given in terms of percentage and just in the case of a draw between topics the score will be used. The following scale was prepared as a means of distinguishing the topics graded by the participants into the three categories previously mentioned (see Table 1 below). This scale will be used to identify the most relevant topics based on the percentages shown in the first column of the tables.

Table 1- Scale of Topic Relevance

| LEVEL | High Relevance | Medium Relevance | Low Relevance |
|--------------|-----------------------|-------------------------|----------------------|
| SCALE | Above 67% | 67% – 34% | Below 34% |

Furthermore, the results are going to be presented and analyzed, departing from a local perspective to a more global view, starting with each semester/group, then each institution and finally, the totality of participants. This final result will be used for checking the presence of the topics in the selected textbooks.

The use of a checklist as a means of identifying the most relevant topics, mainly taken from the selected textbooks, may have functioned as a guideline for the students and professionals and allowed them to present their own contribution. Although the

additional topics, which were suggested by students and teachers, are going to be presented, they are not going to be analyzed due to the fact that there were very few suggestions per number of participants.

In the area of English for Specific Academic Purposes the selection of appropriate materials is one of the teacher's role, an activity that is at the same time important and time consuming. According to Dudley-Evans and St. John (1998), topics are among the numerous criteria for the selection of materials. Their idea that "ESP is essentially a materials- and teaching-led movement" (Dudley-Evans & St. John, 1998, p.19) combined with the results of the Brazilian National ESP Project which has shown "a special emphasis on the reading ability" (Celany, Holmes, Ramos & Scott, 1988, p.234) show how important text selection is. For this reason, the identification of relevant topics for the undergraduate students and professionals in the Information Systems courses and their occurrence in the selected textbooks represent a substantial part of this study.

Before starting the analysis of the results, it is important to emphasize that whenever a draw between topics occurs the score column will be used. The results of this research (see Table 2 below) show that for the undergraduate students in the third semester of the Information Systems course at Faculdade Estácio de Sá, the most relevant topics were 1st – Programming Languages (87.50%), Software (87.50%), and Security and Privacy on the Net (87.50%); 2nd – Internet (81.25%); 3rd - Operating Systems (81.25%) and Programming Stages (81.25%); 4th - Configuration (75.00%); 5th - Database Program (73.33%); 6th - Virus (68.75%); 7th - Globalization (68.75%) and Hackers (68.75%).

Table 2: Topic Relevance as perceived by the Third Semester Information Systems Undergraduate Students at Faculdade Estácio de Sá.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|----------------|------------------|---------------|-------|---------|
| Operating Systems | 81.25 | 12.50 | 06.25 | 100 | 45.8333 |
| Programming Languages | 87.50 | 06.25 | 06.25 | 100 | 46.8750 |
| Globalization | 68.75 | 25.00 | 06.25 | 100 | 43.7500 |
| Programming Stages | 81.25 | 12.50 | 06.25 | 100 | 45.8333 |
| Artificial Intelligence | 56.25 | 37.50 | 06.25 | 100 | 41.6667 |
| Virus | 68.75 | 31.25 | 00.00 | 100 | 44.7917 |
| Internet | 81.25 | 18.75 | 00.00 | 100 | 46.8750 |
| Software | 87.50 | 06.25 | 06.25 | 100 | 46.8750 |
| Configuration | 75.00 | 18.75 | 06.25 | 100 | 44.7917 |
| Inside the Computer | 50.00 | 31.25 | 18.75 | 100 | 38.5417 |
| The Era of Computers | 56.25 | 31.25 | 12.50 | 100 | 40.6250 |
| The History of Computers | 25.00 | 56.25 | 18.75 | 100 | 34.3750 |
| Knowing the Computer | 37.50 | 50.00 | 12.50 | 100 | 37.5000 |
| Types of Computer | 62.50 | 25.00 | 12.50 | 100 | 41.6667 |
| Hackers | 68.75 | 25.00 | 06.25 | 100 | 43.7500 |
| Security and Privacy on the Net | 87.50 | 06.25 | 06.25 | 100 | 46.8750 |
| Database Program | 73.33 | 20.00 | 06.66 | 100 | 44.4444 |

Although there were 16 students in this group, only four students gave their suggestions of additional relevant topics not included on the list. Two students suggested one topic each. The other two students suggested two topics each, one of the topics being identical (Intranet). See Table 3 below for results:

Table 3: Topics suggested and graded by the Third Semester Information Systems Undergraduate Students at Faculdade Estácio de Sá.

| TOPICS | Grades 1 – 2 | Grades 3 - 4 | Grades 5 - 6 | TOTAL |
|---------------------------------|--------------|--------------|--------------|----------|
| System Errors | 0 | 0 | 1 | 1 |
| Intranet | 2 | 0 | 0 | 2 |
| Database on the Internet | 1 | 0 | 0 | 1 |
| Management General Theory | 1 | 0 | 0 | 1 |
| Organization, Systems & Methods | 1 | 0 | 0 | 1 |
| TOTAL | 5 | 0 | 1 | 6 |

The 18 undergraduate students from the fourth semester of the Information Systems course at Faculdade Estácio de Sá chose the following topics as the most relevant: 1st - Internet (88.88%); 2nd - Software (83.33%); 3rd Configuration (83.33%); 4th - Security and Privacy on the Net (72.22%) and Database Program (72.22%); and 5th - Operating Systems (72.22%). See Table 4 below for results:

Table 4: Topic Relevance as perceived by the Fourth Semester Information Systems Undergraduate Students at Faculdade Estácio de Sá.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|----------------|------------------|---------------|-------|---------|
| Operating Systems | 72.22 | 00.00 | 27.77 | 100 | 40.7407 |
| Programming Languages | 55.55 | 16.66 | 27.77 | 100 | 37.9630 |
| Globalization | 50.00 | 38.88 | 11.11 | 100 | 39.8148 |
| Programming Stages | 50.00 | 27.77 | 22.22 | 100 | 37.9630 |
| Artificial Intelligence | 44.44 | 44.44 | 11.11 | 100 | 38.8889 |
| Virus | 55.55 | 33.33 | 11.11 | 100 | 40.7407 |
| Internet | 88.88 | 00.00 | 11.11 | 100 | 46.2963 |
| Software | 83.33 | 05.55 | 11.11 | 100 | 45.3704 |
| Configuration | 83.33 | 00.00 | 16.66 | 100 | 44.4444 |
| Inside the Computer | 50.00 | 27.77 | 22.22 | 100 | 37.9630 |
| The Era of Computers | 33.33 | 22.22 | 44.44 | 100 | 31.4815 |
| The History of Computers | 22.22 | 50.00 | 27.77 | 100 | 32.4074 |
| Knowing the Computer | 27.77 | 61.11 | 11.11 | 100 | 36.1111 |
| Types of Computer | 55.55 | 27.77 | 16.66 | 100 | 39.8148 |
| Hackers | 38.88 | 33.33 | 27.77 | 100 | 35.1852 |
| Security and Privacy on the Net | 72.22 | 05.55 | 22.22 | 100 | 41.6667 |
| Database Program | 72.22 | 05.55 | 22.22 | 100 | 41.6667 |

Although two undergraduate students in the fourth semester at Faculdade Estácio de Sá suggested one topic each, one of the topics was not graded (see Table 5):

Table 5: Topics suggested and graded by the Fourth Semester Information Systems Undergraduate Students at Faculdade Estácio de Sá.

| TOPICS | Grades 1 – 2 | Grades 3 – 4 | Grades 5 – 6 | TOTAL |
|---------------------|--------------|--------------|--------------|----------|
| Information Systems | 1 | 0 | 0 | 1 |
| CAD* | 0 | 0 | 0 | 0 |
| TOTAL | 1 | 0 | 0 | 1 |

* Computer Aided Design

The results from the two groups of students show that the fourth semester students seemed more selective as they chose almost half of the topics graded by the third semester and that those topics were among the ones that the third semester students graded as relevant (above 73.33%).

The first group of undergraduate students from the seventh semester of Information Systems at Associação Educacional Leonardo Da Vinci identified the following topics as the most relevant: 1st – Database Program (100.00%); 2nd - Programming Languages (90.00%); 3rd – Configuration (80.00%) and Security and Privacy on the Net (80.00%); 4th - Software (80.00%); 5th – Operating Systems (75.99%); 6th – Programming Stages (75.00%); and 7th – Internet (70.00%). See Table 6 below:

Table 6: Topic Relevance as perceived by the First Group of Seventh Semester Information Systems Undergraduate Students at Associação Educacional Leonardo Da Vinci.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|-----------------------|-------------------------|----------------------|--------------|----------------|
| Operating Systems | 75.00 | 20.00 | 05.00 | 100 | 45.0000 |
| Programming Languages | 90.00 | 10.00 | 00.00 | 100 | 48.3333 |
| Globalization | 30.00 | 50.00 | 20.00 | 100 | 35.0000 |
| Programming Stages | 75.00 | 15.00 | 10.00 | 100 | 44.1667 |
| Artificial Intelligence | 60.00 | 35.00 | 05.00 | 100 | 42.5000 |
| Virus | 65.00 | 25.00 | 10.00 | 100 | 42.5000 |
| Internet | 70.00 | 25.00 | 05.00 | 100 | 44.1667 |
| Software | 80.00 | 10.00 | 10.00 | 100 | 45.0000 |
| Configuration | 80.00 | 15.00 | 05.00 | 100 | 45.8333 |
| Inside the Computer | 35.00 | 55.00 | 10.00 | 100 | 37.5000 |
| The Era of Computers | 00.00 | 55.00 | 45.00 | 100 | 25.8333 |
| The History of Computers | 10.00 | 35.00 | 55.00 | 100 | 25.8333 |
| Knowing the Computer | 15.00 | 55.00 | 30.00 | 100 | 30.8333 |
| Types of Computer | 30.00 | 50.00 | 20.00 | 100 | 35.0000 |
| Hackers | 55.00 | 45.00 | 00.00 | 100 | 42.5000 |
| Security and Privacy on the Net | 80.00 | 15.00 | 05.00 | 100 | 45.8333 |
| Database Program | 100.00 | 00.00 | 00.00 | 100 | 50.0000 |

There were five topics suggested by four undergraduate students in the first seventh semester group from Associação Educacional Leonardo Da Vinci. One student suggested three topics, while the other three students suggested one topic each. Two of these students suggested the same topic. Moreover, the topic represented by the acronym “T.I.” was identified, with the assistance of the Information Systems course coordinator at ASSELVI, as the Brazilian Portuguese equivalent to Information Technology – “IT”. See Table 7 below:

Table 7: Topics suggested and graded by the First Group of Seventh Semester Information Systems Undergraduate Students at Associação Educacional Leonardo Da Vinci.

| TOPICS | Grades 1 - 2 | Grades 3 – 4 | Grades 5 - 6 | TOTAL |
|------------------|---------------------|---------------------|---------------------|--------------|
| Systems Analysis | 2 | 0 | 0 | 2 |
| Administration | 1 | 0 | 0 | 1 |
| Wireless | 1 | 0 | 0 | 1 |
| Audition | 1 | 0 | 0 | 1 |
| T.I. | 1 | 0 | 0 | 1 |
| TOTAL | 6 | 0 | 0 | 6 |

The second group of undergraduate students from the seventh semester of Information Systems at Associação Educacional Leonardo Da Vinci identified the following topics as the most relevant: 1st – Database Program (85.00%); 2nd – Operating Systems (80.00%); 3rd - Software (80.00%); 4th – Programming Languages (75.00%) and Security and Privacy on the Net (75.00%) and 5th – Internet (70.00%). See Table 8 below for results:

Table 8: Topic Relevance as perceived by the Second Group of Seventh Semester Information Systems Undergraduate Students at Associação Educacional Leonardo Da Vinci.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|-----------------------|-------------------------|----------------------|--------------|----------------|
| Operating Systems | 80.00 | 15.00 | 05.00 | 100 | 45.8333 |
| Programming Languages | 75.00 | 20.00 | 05.00 | 100 | 45.0000 |
| Globalization | 25.00 | 45.00 | 30.00 | 100 | 32.5000 |
| Programming Stages | 60.00 | 30.00 | 10.00 | 100 | 41.6667 |
| Artificial Intelligence | 65.00 | 15.00 | 20.00 | 100 | 40.8333 |
| Virus | 55.00 | 20.00 | 25.00 | 100 | 38.3333 |
| Internet | 70.00 | 20.00 | 10.00 | 100 | 43.3333 |
| Software | 80.00 | 10.00 | 10.00 | 100 | 45.0000 |
| Configuration | 55.00 | 25.00 | 20.00 | 100 | 39.1667 |
| Inside the Computer | 35.00 | 25.00 | 40.00 | 100 | 32.5000 |
| The Era of Computers | 15.00 | 25.00 | 60.00 | 100 | 25.8333 |
| The History of Computers | 10.00 | 30.00 | 60.00 | 100 | 25.0000 |
| Knowing the Computer | 25.00 | 40.00 | 35.00 | 100 | 31.6667 |
| Types of Computer | 45.00 | 20.00 | 35.00 | 100 | 35.0000 |
| Hackers | 50.00 | 25.00 | 25.00 | 100 | 37.5000 |
| Security and Privacy on the Net | 75.00 | 20.00 | 05.00 | 100 | 45.0000 |
| Database Program | 85.00 | 10.00 | 05.00 | 100 | 46.6667 |

Six topics were suggested by three undergraduate students in the second seventh semester group from Associação Educacional Leonardo Da Vinci. One student suggested one topic, one suggested two and another one suggested three topics (see Table 9 below):

Table 9: Topics suggested and graded by the Second Group of Seventh Semester Information Systems Undergraduate Students at Associação Educacional Leonardo Da Vinci.

| TOPICS | Grades 1 – 2 | Grades 3 – 4 | Grades 5 – 6 | TOTAL |
|-------------------------|---------------------|---------------------|---------------------|--------------|
| Nets | 1 | 0 | 0 | 1 |
| Linux | 1 | 0 | 0 | 1 |
| Peripherals Manual | 1 | 0 | 0 | 1 |
| Case Tools 5 Generation | 1 | 0 | 0 | 1 |
| Computer Manuals | 1 | 0 | 0 | 1 |
| Expansion of Computers | 1 | 0 | 0 | 1 |
| TOTAL | 6 | 0 | 0 | 6 |

The two seventh semester groups at Associação Educacional Leonardo Da Vinci graded almost the same number of topics as the most relevant. As it had happened at Faculdade Estácio de Sá, all the six topics selected by the group with the smallest number of topics were among those eight topics that had been graded by the other group.

The most relevant topics for the 34 Information Systems undergraduate students at Faculdade Estácio de Sá were: 1st – Internet (85.29%); 2nd - Software (85.29%); 3rd – Configuration (79.41%); 4th - Security and Privacy on the Net (79.41%); 5th – Operating Systems (76.47%); 6th - Database Program (72.73%) and 7th – Programming Languages (70.59%) (see Table 10 below).

Table 10: Topic Relevance as perceived by the Information Systems Undergraduate Students at Faculdade Estácio de Sá.

| | | | | | |
|---------------------------------|-------|-------|-------|-----|---------|
| Operating Systems | 76.47 | 05.88 | 17.65 | 100 | 43.1373 |
| Programming Languages | 70.59 | 11.76 | 17.65 | 100 | 42.1569 |
| Globalization | 58.82 | 32.35 | 08.82 | 100 | 41.6667 |
| Programing Stages | 64.71 | 20.59 | 14.71 | 100 | 41.6667 |
| Artificial Intelligence | 50.00 | 41.18 | 08.82 | 100 | 40.1961 |
| Virus | 61.76 | 32.35 | 05.88 | 100 | 42.6471 |
| Internet | 85.29 | 08.82 | 05.88 | 100 | 46.5686 |
| Software | 85.29 | 05.88 | 08.82 | 100 | 46.0784 |
| Configuration | 79.41 | 08.82 | 11.76 | 100 | 44.6078 |
| Inside the Computer | 50.00 | 29.41 | 20.59 | 100 | 38.2353 |
| The Era of Computers | 44.12 | 26.47 | 29.41 | 100 | 35.7843 |
| The History of Computers | 23.53 | 52.94 | 23.53 | 100 | 33.3333 |
| Knowing the Computer | 32.35 | 55.88 | 11.76 | 100 | 36.7647 |
| Types of Computer | 58.82 | 26.47 | 14.71 | 100 | 40.6863 |
| Hackers | 52.94 | 29.41 | 17.65 | 100 | 39.2157 |
| Security and Privacy on the Net | 79.41 | 05.88 | 14.71 | 100 | 44.1176 |
| Database Program | 72.73 | 12.12 | 15.15 | 100 | 42.9293 |

The seven teachers from Faculdade Estácio the Sá identified the following topics as the most relevant: 1st - Programming Languages (71.43%) and 2nd – Internet,

Software and Security and Privacy on the Net, graded at exactly the same level of relevance (71.43%) (see Table 11 below).

Table 11: Topic Relevance as perceived by the Information Systems Teachers at Faculdade Estácio de Sá.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|-----------------------|-------------------------|----------------------|--------------|----------------|
| Operating Systems | 57.14 | 28.57 | 14.29 | 100 | 40.4762 |
| Programming Languages | 71.43 | 14.29 | 14.29 | 100 | 42.8571 |
| Globalization | 14.29 | 42.86 | 42.86 | 100 | 28.5714 |
| Programming Stages | 42.86 | 28.57 | 28.57 | 100 | 35.7143 |
| Artificial Intelligence | 42.86 | 28.57 | 28.57 | 100 | 35.7143 |
| Virus | 57.14 | 14.29 | 28.57 | 100 | 38.0952 |
| Internet | 71.43 | 00.00 | 28.57 | 100 | 40.4762 |
| Software | 71.43 | 00.00 | 28.57 | 100 | 40.4762 |
| Configuration | 42.86 | 28.57 | 28.57 | 100 | 35.7143 |
| Inside the Computer | 42.86 | 42.86 | 14.29 | 100 | 38.0952 |
| The Era of Computers | 42.86 | 57.14 | 00.00 | 100 | 40.4762 |
| The History of Computers | 42.86 | 57.14 | 00.00 | 100 | 40.4762 |
| Knowing the Computer | 57.14 | 28.57 | 14.29 | 100 | 40.4762 |
| Types of Computer | 57.14 | 28.57 | 14.29 | 100 | 40.4762 |
| Hackers | 57.14 | 28.57 | 14.29 | 100 | 40.4762 |
| Security and Privacy on the Net | 71.43 | 00.00 | 28.57 | 100 | 40.4762 |
| Database Program | 50.00 | 16.67 | 33.33 | 100 | 36.1111 |

A comparison between the choices made by the students and the teachers at Faculdade Estácio de Sá shows that teachers were more selective than students. While students selected 7 topics as highly relevant, their teachers chose only four, which were among those graded by the students. Additionally, none of the teachers at Faculdade Estácio de Sá suggested any topics.

The eight topics considered the most relevant by the 40 Information Systems undergraduate students at Associação Educacional Leonardo Da Vinci were: 1st – Database Program (92.50%); 2nd – Programming Languages (82.50%); 3rd – Software (80.00%); 4th – Security and Privacy on the Net and Operating Systems (77,50%); 5th –

Internet (70.00%); 6th – Programming Stages (67.50%) and 7th – Configuration (67.50%) (see Table 12 below).

Table 12: Topic Relevance as perceived by the Information Systems Undergraduate Students at Associação Educacional Leonardo Da Vinci.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|-----------------------|-------------------------|----------------------|--------------|----------------|
| Operating Systems | 77.50 | 17.50 | 05.00 | 100 | 45.4167 |
| Programming Languages | 82.50 | 15.00 | 02.50 | 100 | 46.6667 |
| Globalization | 27.50 | 47.50 | 25.00 | 100 | 33.7500 |
| Programming Stages | 67.50 | 22.50 | 10.00 | 100 | 42.9167 |
| Artificial Intelligence | 62.50 | 25.00 | 12.50 | 100 | 41.6667 |
| Virus | 60.00 | 22.50 | 17.50 | 100 | 40.4167 |
| Internet | 70.00 | 22.50 | 07.50 | 100 | 43.7500 |
| Software | 80.00 | 10.00 | 10.00 | 100 | 45.0000 |
| Configuration | 67.50 | 20.00 | 12.50 | 100 | 42.5000 |
| Inside the Computer | 35.00 | 40.00 | 25.00 | 100 | 35.0000 |
| The Era of Computers | 07.50 | 40.00 | 52.50 | 100 | 25.8333 |
| The History of Computers | 10.00 | 32.50 | 57.50 | 100 | 25.4167 |
| Knowing the Computer | 20.00 | 47.50 | 32.50 | 100 | 31.2500 |
| Types of Computer | 37.50 | 35.00 | 27.50 | 100 | 35.0000 |
| Hackers | 52.50 | 35.00 | 12.50 | 100 | 40.0000 |
| Security and Privacy on the Net | 77.50 | 17.50 | 05.00 | 100 | 45.4167 |
| Database Program | 92.50 | 05.00 | 02.50 | 100 | 48.3333 |

The seven teachers from Associação Educacional Leonardo Da Vinci identified the following topics as the most relevant: 1st – Internet (100.00%) and Software (100.00%); 2nd – Operating Systems (85.71%); Configuration (85.71%); Security and Privacy on the Net (85.71%) and Database Program (85,71%); 3rd – Programming Languages (71.43%) and Programming Stages (71.43%). The first two topics had equal percentage and score and the same happened with the following four topics and the last two (see Table 13 below):

Table 13: Topic Relevance as perceived by the Information Systems Teachers at Associação Educacional Leonardo Da Vinci.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|-----------------------|-------------------------|----------------------|--------------|----------------|
| Operating Systems | 85.71 | 14.29 | 00.00 | 100 | 47.6190 |
| Programming Languages | 71.43 | 28.57 | 00.00 | 100 | 45.2381 |
| Globalization | 28.57 | 71.43 | 00.00 | 100 | 38.0952 |
| Programming Stages | 71.43 | 28.57 | 00.00 | 100 | 45.2381 |
| Artificial Intelligence | 42.86 | 28.57 | 28.57 | 100 | 35.7143 |
| Virus | 42.86 | 57.14 | 00.00 | 100 | 40.4762 |
| Internet | 100.00 | 00.00 | 00.00 | 100 | 50.0000 |
| Software | 100.00 | 00.00 | 00.00 | 100 | 50.0000 |
| Configuration | 85.71 | 14.29 | 00.00 | 100 | 47.6190 |
| Inside the Computer | 42.86 | 28.57 | 28.57 | 100 | 35.7143 |
| The Era of Computers | 14.29 | 28.57 | 57.14 | 100 | 26.1905 |
| The History of Computers | 14.29 | 28.57 | 57.14 | 100 | 26.1905 |
| Knowing the Computer | 28.57 | 57.14 | 14.29 | 100 | 35.7143 |
| Types of Computer | 42.86 | 42.86 | 14.29 | 100 | 38.0952 |
| Hackers | 42.86 | 57.14 | 00.00 | 100 | 40.4762 |
| Security and Privacy on the Net | 85.71 | 14.29 | 00.00 | 100 | 47.6190 |
| Database Program | 85.71 | 14.29 | 00.00 | 100 | 47.6190 |

Only one teacher at Associação Educacional Leonardo Da Vinci suggested the following additional topics not included on the list: 1- Flow of Administrative Information; 2 – The relationship between client and the information technology professional; 3 – Information Survey. These topics were considered as having the same degree of relevance.

In the case of the students and the teachers' choices from Associação Educacional Leonardo Da Vinci, not only was the amount of topics chosen the same (8 topics) but the topics themselves. The researcher believes that this finding corroborates the relevance of the topics selected and assumes that the coincidence of topics between the seventh semester students and the professionals is probably due to the fact that these students are nearly at the end of their course (eighth semester), thus having a broader and better idea of relevant topics.

The most relevant topics for the undergraduate Information Systems students from Faculdade Estácio de Sá and Associação Educacional Leonardo Da Vinci were: 1st – Database Program (83.56%); 2nd – Software (82.43%); 3rd – Security and Privacy on the Net (78.38%); 4th – Internet (77.03%); 5th – Programming Languages (77.03%); 6th – Operating Systems (77.03%) and 7th – Configuration (72.97%), which are presented in Table 14 below:

Table 14: Topic Relevance as perceived by the Information Systems Undergraduate Students at Faculdade Estácio de Sá and Associação Educacional Leonardo Da Vinci.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|-----------------------|-------------------------|----------------------|--------------|----------------|
| Operating Systems | 77.03 | 12.16 | 10.81 | 100 | 44.3694 |
| Programming Languages | 77.03 | 13.51 | 09.46 | 100 | 44.5946 |
| Globalization | 41.89 | 40.54 | 17.57 | 100 | 37.3874 |
| Programming Stages | 66.22 | 21.62 | 12.16 | 100 | 42.3423 |
| Artificial Intelligence | 56.76 | 32.43 | 10.81 | 100 | 40.9910 |
| Virus | 60.81 | 27.03 | 12.16 | 100 | 41.4414 |
| Internet | 77.03 | 16.22 | 06.76 | 100 | 45.0450 |
| Software | 82.43 | 08.11 | 09.46 | 100 | 45.4955 |
| Configuration | 72.97 | 14.86 | 12.16 | 100 | 43.4685 |
| Inside the Computer | 41.89 | 35.14 | 22.97 | 100 | 36.4865 |
| The Era of Computers | 24.32 | 33.78 | 41.89 | 100 | 30.4054 |
| The History of Computers | 16.22 | 41.89 | 41.89 | 100 | 29.0541 |
| Knowing the Computer | 25.68 | 51.35 | 22.97 | 100 | 33.7838 |
| Types of Computer | 47.30 | 31.08 | 21.62 | 100 | 37.6126 |
| Hackers | 52.70 | 32.43 | 14.86 | 100 | 39.6396 |
| Security and Privacy on the Net | 78.38 | 12.16 | 09.46 | 100 | 44.8198 |
| Database Program | 83.56 | 08.22 | 08.22 | 100 | 45.8904 |

The 14 teachers from Faculdade Estácio de Sá and Associação Educacional Leonardo Da Vinci chose the following as the most relevant topics: 1st – Internet (85.71%) and Software (85.71%); 2nd – Security and Privacy on the Net (78.57%); 3rd – Operating Systems (71.43%) and Programming Languages (71.43%) and 4th – Database Program (69.23%) (see Table 15 below).

Table 15: Topic Relevance as perceived by the Information Systems Teachers at Faculdade Estácio de Sá and Associação Educacional Leonardo Da Vinci.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|-----------------------|-------------------------|----------------------|--------------|----------------|
| Operating Systems | 71.43 | 21.43 | 07.14 | 100 | 44.0476 |
| Programming Languages | 71.43 | 21.43 | 07.14 | 100 | 44.0476 |
| Globalization | 21.43 | 57.14 | 21.43 | 100 | 33.3333 |
| Programming Stages | 57.14 | 28.57 | 14.29 | 100 | 40.4762 |
| Artificial Intelligence | 42.86 | 28.57 | 28.57 | 100 | 35.7143 |
| Virus | 50.00 | 35.71 | 14.29 | 100 | 39.2857 |
| Internet | 85.71 | 00.00 | 14.29 | 100 | 45.2381 |
| Software | 85.71 | 00.00 | 14.29 | 100 | 45.2381 |
| Configuration | 64.29 | 21.43 | 14.29 | 100 | 41.6667 |
| Inside the Computer | 42.86 | 35.71 | 21.43 | 100 | 36.9048 |
| The Era of Computers | 28.57 | 42.86 | 28.57 | 100 | 33.3333 |
| The History of Computers | 28.57 | 42.86 | 28.57 | 100 | 33.3333 |
| Knowing the Computer | 42.86 | 42.86 | 14.29 | 100 | 38.0952 |
| Types of Computer | 50.00 | 35.71 | 14.29 | 100 | 39.2857 |
| Hackers | 50.00 | 42.86 | 07.14 | 100 | 40.4762 |
| Security and Privacy on the Net | 78.57 | 07.14 | 14.29 | 100 | 44.0476 |
| Database Program | 69.23 | 15.38 | 15.38 | 100 | 42.3077 |

The results obtained in the analysis of topic relevance for the undergraduate students from both institutions and their teachers show that apart from ‘Configuration’, all the other six topics graded were the same.

The totality of students and teachers at Faculdade Estácio de Sá and Associação Educacional Leonardo Da Vinci selected the following as the most relevant topics: 1st – Software (82.95%); 2nd – Database Program (81.40%); 3rd – Internet (78.41%); 4th – Security and Privacy on the Net (78.41%); 5th – Programming Languages (76.14%) and 6th – Operating Systems (76.14%) (see Table 16 below).

Table 16: Topic Relevance as perceived by the Information Systems Undergraduate Students and Teachers at Faculdade Estácio de Sá and Associação Educacional Leonardo Da Vinci.

| TOPICS | High Relevance | Medium Relevance | Low Relevance | TOTAL | SCORE |
|---------------------------------|-----------------------|-------------------------|----------------------|--------------|----------------|
| Operating Systems | 76.14 | 13.64 | 10.23 | 100 | 44.3182 |
| Programming Languages | 76.14 | 14.77 | 09.09 | 100 | 44.5076 |
| Globalization | 38.64 | 43.18 | 18.18 | 100 | 36.7424 |
| Programming Stages | 64.77 | 22.73 | 12.50 | 100 | 42.0455 |
| Artificial Intelligence | 54.55 | 31.82 | 13.64 | 100 | 40.1515 |
| Virus | 59.09 | 28.41 | 12.50 | 100 | 41.0985 |
| Internet | 78.41 | 13.64 | 07.95 | 100 | 45.0758 |
| Software | 82.95 | 06.82 | 10.23 | 100 | 45.4545 |
| Configuration | 71.59 | 15.91 | 12.50 | 100 | 43.1818 |
| Inside the Computer | 42.05 | 35.23 | 22.73 | 100 | 36.5530 |
| The Era of Computers | 25.00 | 35.23 | 39.77 | 100 | 30.8712 |
| The History of Computers | 18.18 | 42.05 | 39.77 | 100 | 29.7348 |
| Knowing the Computer | 28.41 | 50.00 | 21.59 | 100 | 34.4697 |
| Types of Computer | 47.73 | 31.82 | 20.45 | 100 | 37.8788 |
| Hackers | 52.27 | 34.09 | 13.64 | 100 | 39.7727 |
| Security and Privacy on the Net | 78.41 | 11.36 | 10.23 | 100 | 44.6970 |
| Database Program | 81.40 | 09.30 | 09.30 | 100 | 45.3488 |

The results shown in Table 16 reveal that only three topics belong to the ‘low relevance’ category and that all the others were considered of ‘medium’ or ‘high relevance’, according to the scale of topic relevance (see Table 1). The ‘low relevance’ topics were: ‘The history of computers’ (18.18%), ‘The era of computers’ (25.00%) and ‘Knowing the computer’ (28.41%) and this illustrates a characteristic of Brazilian students who may not be very interested in history. Additionally, these topics were only present in two textbooks: *Inglês.com.textos para Informática* (the three topics) and *Reading Strategies for Computing* (one topic). Nevertheless, *Inglês.com.textos para Informática* contains thirteen of the topics graded, followed by *Reading Strategies for Computing* and *Infotech* (nine topics each) and *Basic English for Computing* (eight topics).

From these analyses the researcher was able to find out that the topics presented in the selected textbooks match those graded by the students and professionals in the Information Systems undergraduate courses. I could also observe that although the topics chosen by the undergraduate students and professionals in the Information Systems courses at Faculdade Estácio de Sá and Associação Educacional Leonardo Da Vinci are present in the majority of the selected books, the amount and the scope of the information on each topic may vary. Some textbooks present the topic in a single paragraph; others have it in a four or five paragraph text, while others devote a whole unit to that topic. This variation may be related to the year and the place where the textbook was published, possibly showing that topics which tend to be highly exploited could be those that were considered ‘up to date’ or relevant to the readers/users’ context at the time the book was written.

Moreover, through the analysis of the checklists the researcher was able to identify the six most relevant topics for the undergraduate students and professionals in the Information Systems Courses at Faculdade Estácio de Sá and Associação Educacional Leonardo Da Vinci and, consequently, verify their occurrence in the selected textbooks (see Table 17 below):

Table 17: Matching between the selected textbooks and the most relevant topics to the undergraduate students and professionals in the Information Systems Courses.

| Topics | Materials | Basic English for Computing | Infotech | Inglês.com.textos para Informática | Reading Strategies for Computing |
|---------------------------------|-----------|-----------------------------|----------|------------------------------------|----------------------------------|
| Software | | Yes | Yes | Yes | Yes |
| Database Program | | Yes | Yes | Yes | Yes |
| Internet | | Yes | Yes | Yes | Yes |
| Security and Privacy on the Net | | Yes | Yes | No | Yes |
| Programming Languages | | Yes | Yes | Yes | No |
| Operating Systems | | No | Yes | Yes | No |

From the above, I believe that the identification of the most relevant topics, more specifically for Information Systems undergraduate students and teachers, and their presence in the textbooks may provide an opportunity to build up a bridge between the topics in the materials available and the students' interests and motivation. Thus, departing from the assumption that the teachers' choices of topics could serve as an indication of which topics are going to be important for the students' professional lives, and taking as evidence the fact that the topics graded as the most relevant by the students were among those graded by their teachers, it may become apparent that those could be considered the topics in their area of specialization and consequently, capable of catching students' interest in reading.

The role that motivation has played in the area of English for Specific Purposes is emphasized by Hutchinson and Waters (1987) as "one of the most important elements in the development of ESP" (p. 48). In a discussion on the use of highly specialized texts, these scholars give support to the connection between the relevance of topics and motivation asserting that "learners may be more motivated by them, because they make the language seem more relevant" (p.161). A significant example is a complementary study developed by CEPRIL (Centro de Pesquisas, Recursos e Informação em Leitura) at The Pontifical Catholic University of São Paulo, which has shown a connection between students' receptivity to materials and their opinion in relation to the materials relevance to their area of specialization (Salm, 1999).

Also, the connection between reading, reading topics and motivation is in the realm of English for Specific Purposes. For McDonough and Shaw (1993), "in many instances around the world we may argue that reading is *the* most important foreign language skill, particularly in the case where students have to read English material for their own specialist subject" (p. 101). This assertion is confirmed by Fortune (1979) as

he refers to research carried out by R. Mackay (1976, as cited in Fortune, 1979) for the Universidad Autonoma de Mexico, concluding that “the type of reading material which appears to motivate the student to the greatest extent is that which both reinforces and expands his present knowledge of his chosen subject” (p. 45). Equally, Morrow (1979) in his article *Authentic Texts and ESP*, though tackling the point of authentic texts, assumes that “one of the most striking characteristics of groups of ESP learners in my experience is that they have a very clear idea of why they are learning the language, and very little tolerance of anything they consider irrelevant to this purpose” (p. 14). In a nutshell, “if students can see a close connection between the content of the material and their study needs/wants, then there will be a strong motivating force for language learning” (Jordan, 1997, p. 262).

To sum up, in order to find the answer to the first research question the researcher used a checklist to identify the topics perceived as relevant by undergraduate students and teachers in the Information Systems courses from two distinct tertiary level institutions, in Santa Catarina – Brazil. Results from checklists analysis showed that the texts presented in the textbooks match the topics graded by the students and teachers in the Information Systems course. The very few topics that were not considered relevant by the participants appeared in two of the selected books, while most of the textbooks presented more than half of the topics graded as being relevant. An interesting finding is that the amount of information on the topics varies from one book to another, thus ranging from a single paragraph to a whole unit. The researcher was also able to identify the six most relevant topics for the participants and match them with the topics present in the textbooks. Departing from this finding, the researcher has tried to find support in the literature in order to establish a connection between these topics and the students’ motivation in reading them.

The next section discusses the types of text present in the selected textbooks.

4.1.2 What Types of Texts Do the Selected Textbooks Present?

Before presenting the analyses, it is necessary to clarify that even though units 4 and 14 from each textbook were examined, only the analysis of one of them will be presented and discussed. The reason for this choice is related to the variety of text types found, which in conjunction with the other aspects analyzed would extend this work considerably. For instance, in three of the selected textbooks Unit 14 presented different types of texts. Thus, in order to address the second research question, it is noteworthy to turn to the area of materials selection and evaluation to identify the types of texts present in the selected textbooks. Therefore, to carry out this analysis, the researcher will follow the framework for text analysis addressed in Chapter 3.

4.1.2.1 Basic English for Computing

The external evaluation showed that the first selected textbook *Basic English for Computing* is meant for both students and individuals who work in the computing sector and whose level of English ranges from elementary to pre-intermediate. Since it has been published abroad, this book is entirely written in English, which for Brazilian undergraduate students might mean an additional demand especially when reading the instructions. To corroborate its broad approach the authors state that “the course aims to develop students’ language skills in the context of computing and information technology with emphasis on reading, listening, speaking, and writing – in that order” (Teacher’s book, p. 3).

The book contains twenty-eight topic-based units, which are divided into sections. The number of sections per unit varies from five to seven (for a complete unit see Appendix B). All units include a tuning-in, a listening and a language work section. The other sections are: aids to communication, problem-solving, computing words and abbreviations, reading, writing and speaking. Within the twenty-eight units there are twenty-two reading sections comprised of twenty-two texts.

An internal evaluation of units 4 and 14 revealed that in relation to authenticity the authors' choice of authentic materials seems evident, as the texts present in these two units come from a newspaper (*The Guardian*) and from a book or magazine (*Computer Success*), respectively (see Appendices B and C). Besides, the authors and publishers acknowledge, in the inside cover of the Student's book, that some of them are adapted texts¹, and others are extracts. In terms of size the text in unit 4 contains 108 words, while there are respectively, fifty-eight, seventy-one, seventy and sixty words in the four one-paragraph texts in unit 14. The choice of short texts may be connected to students' level of English and to the fact that reading is not the only skill to be worked with.

Turning to the text-type feature, the authors state that "the texts are drawn from genres such as textbooks, newspapers, popular computing magazines, Internet newsgroups, screen displays, Web pages, manuals and advertisements" (Teacher's book, p. 3). Analyzing the text in unit 4 (see Appendix B), as part of the internal evaluation, it contains information about how a common type of mouse works. A pre-reading activity is set asking students to complete some sentences based on a diagram, which explains how a mouse works. Students try to complete the task and read the text afterwards to check their answers. Based on Davies's (1995) classification, the

¹ The terms 'adapted' or 'simplified', unless stated otherwise, here refer to adaptations of copyright material.

researcher believes that this type of text would fall into the informative category and as a newspaper article it can also be viewed as a genre for study purposes.

To sum up, as a result of the external and internal evaluations, this textbook could be viewed as designed to teach ESAP mainly where English is used as the means of communication. The book contains a reasonable number of texts, in an appropriate level (elementary to pre-intermediate) and size for Brazilian ESAP students, which could be considered as a positive aspect. Moreover, it makes use of authentic materials and presents a sample of text type (informative) that students will probably encounter in their professional lives. Nevertheless, the fact that it emphasizes all the four language skills may not be appropriate for the Brazilian ESAP teaching context where reading has been identified as the most necessary skill.

4.1.2.2. Infotech English for Computer Users

The external evaluation of the second textbook, *Infotech English for Computer Users*, showed that this book is directed at intermediate level learners who need to be able to understand and use the English of computing for study and work purposes. It consists of thirty units, organized into seven sections that are identified by general computing topics. Each section contains between three and six units. Each of these units presents some of the following components: listening, reading, speaking, writing, grammar and vocabulary. The most frequent components are listening and vocabulary, which appear in all units, followed by reading (not present only in unit 17). This shows that the development of all four skills is also a key feature of the book. There are forty texts in this textbook.

The external evaluation has complemented the internal evaluation, as it has allowed the researcher to find out on the blurb that the book publishers acknowledge the use of “authentic reading texts from the world of computing” and that both the author and the publishers recognize that some texts are extracts or adaptations (Student’s book, p. viii). For instance, in the case of the adaptations this information is stated at the end of the text (Student’s book, p. 74). The texts chosen as part of the reading components are longer texts. A close observation confirmed this point, as the texts in units 4 and 14 contain 361 words and 572 words, respectively (see Appendices D and E). The assumption here is that the students’ level of English (Intermediate) allowed the author to select longer texts. Most texts in this book were taken from textbooks, computing magazines, advertisements, manuals, screen displays and web pages. As it happened with the text in unit 4 of *Basic English for Computing*, a pre-reading activity is set. Thus, the text in unit 4 (see Appendix D) of *Infotech* is supposed to be read after students have answered some questions about ‘Units of Memory’. The purpose for reading the text is to check their answers or to find the right ones. In this case, according to Davies’s (1995) categorization, this text type would fit into the informative class, as students will be learning from it.

Summing up, *Infotech English for Computer Users* contains both adaptations and authentic texts and has a considerable amount of texts to be dealt with. The chosen texts may be considered quite long, an aspect that may be related to the fact that it is aimed at intermediate level students. The type of text identified in unit 4 belonged to the informative category according to Davies (1995). Moreover, as it is written in English, it may be assumed that it is more appropriate to teach ESAP where English is the means of communication. Finally, this textbook also deals with the four skills and similarly to

the previously analyzed book this can be considered a drawback in the teaching of ESAP to Brazilian undergraduate students.

4.1.2.3 Reading Strategies for Computing

The external evaluation showed that this book was designed for Brazilian students of computing, professionals or trainee professionals. As stated in the back cover of the book, it is appropriate for intermediate or upper-intermediate level students who need to develop their reading skills for study or professional purposes. As it is published in Brazil and aimed at Brazilian students or professionals, all the instructions and explanations are written in Brazilian Portuguese. This is an important aspect in the case of the Information Systems students and professionals because it would allow them to use the book without the supervision of a teacher. The title *Reading Strategies for Computing* clearly demonstrates its focus on reading strategies.

Among the selected books, *Reading Strategies for Computing* is the book that contains the least number of units, only fourteen. The units are organized mainly into tasks and readings, though there are other divisions such as ‘to warm you up’, ‘core unit’ and ‘coffee break’. The author has chosen to identify the units through different ‘techniques’ or strategies. There are twenty-three texts especially identified by the author as ‘reading’ (from unit 2 to unit 14). Even though, from the researcher’s point of view some tasks could also be considered as texts, as the gap filling exercise (task 8) in unit 3 (see Appendix F), where short paragraphs about ‘Software Servants’ have to be read and understood in order to be filled by the students (Student’s book, p. 53).

After carrying out the internal evaluation, the researcher was able to observe that this book’s author has selected authentic texts, which are identified as such at the end of

each text. These texts come from various sources such as “newspapers and international magazines, ads, application forms, signs, graphs and tables” (my translation), as mentioned by the author in her forewords to teachers (Student’s book, p. 10). Adapted texts are also present and identified at the end of the text. In relation to text size, while the text in unit 4 has 623 words, the text in unit14 has 485 words (see Appendices G and H). Therefore, the same assumption made for the previous textbook in relation to the size of the texts can be applied here. The type of text present in unit 4 (see Appendix G) was taken from a scientific journal (Journal of Reading), which is among the genres listed as informative. In this case, the task (TASK 2) asks the students to fill in a chart with specifications from the text after reading and it enables students to learn new information from the text.

In sum, although this book has the lowest number of units, which are identified through different ‘techniques’ or strategies, it presents a significant number of texts. This may be due to two factors. First, that this book concentrates on the reading skill, and secondly, because it has been published in Brazil and aimed at Brazilian students. Most of the texts presented are authentic and may be considered long texts (usually one page long). This last point may be related to students’ level of English (intermediate or upper-intermediate) proposed in the book, which is not usually the case of Brazilian undergraduate students. As a result of the analysis carried out in this study the text type present in Unit 4 has been identified as informative.

4.1.2.4 Inglês.com.textos para Informática

The external evaluation of the last selected textbook showed that it consists of twenty-four units that are identified by means of topics in the computing area. The fact

that most subject-specific books are organized according to theme or topic is discussed in Jordan (1997). Although no indication is made in relation to the students' level of English, the authors state in the presentation that the book was the result of an ESAP project and designed to be used with Brazilian college students. The title *Inglês.com.textos para Informática* clearly demonstrates the authors' intention to keep reading as the focus of this book. Each unit deals mainly with three components, namely: 'text', 'strategies' and 'structure'. The latter is related to grammar (see Appendix I for a complete unit). Twenty-five texts appear as part of the 'text' component present in the twenty-four units.

The internal evaluation showed that the texts selected for this book were taken from textbooks, dictionaries, magazines, diagrams, quotations, web pages and screen displays. Most texts are extracts or have been adapted. This is explained in the reference section, where the authors point out that unless indicated as transcriptions or translations, they have used the sources to create or adapt the texts used in the book (Student's book, p.4). Interestingly, some of the adapted texts were taken from the textbook *Infotech English for Computer Users*, which is among the books selected in this study. The number of words in the texts in units 4 and 14 is almost the same (around 330 words) (see Appendices I and J). The researcher believes that text size, in this situation, is connected to the point made by the authors that the 24 units were planned for courses lasting from 60 to 72 hours (the case of most Brazilian tertiary level courses) and possibly allowing these texts to be adequately explored in class time (Book's presentation, p. 5).

Differently from the texts analyzed in the other textbooks, the text in unit 4 of *Inglês.com.textos para Informática* was divided into two parts. The first paragraph was separated from the rest of the text in order to present and explore the use of cognates as

a reading strategy. Then, using the information from the text, students read the rest of the text about 'The Computer System' to complete a diagram. As this text serves as a basis for learning new information about this kind of system taken from textbooks, the researcher assumes it can be classified as an informative type of text. To corroborate this assumption, the authors affirm that the construction and consolidation of knowledge in the students' area of specialism is part of the objective of the texts (Book's presentation, p. 5)

In brief, this textbook approach may reflect the fact that it has been written as a result of an ESAP project and also aimed at Brazilian college students, hence its emphasis on the reading skill. Most texts are extracts or adapted texts and in terms of text size the texts in the two analyzed units had an average of 300 words. This last point could be related to the fact that this book was designed for a course intended to cover all the 24 units in a maximum of 72 hours. The units were identified by topics in the computing area. Finally, the type of text identified in unit 4 was taken from a textbook and it was categorized as an informative text.

4.1.2.5 General Comments

A contrastive factor, which is worth mentioning, appeared while the researcher was carrying out these analyses and it is related to the fact that the textbooks published in Brazil focus mainly on reading strategies, while the books published abroad tend to develop and practice, not just reading strategies, but also writing, listening and speaking. This finding confirms St. John's (1992) argument that as observed in many parts of the world, including Brazil, ESP courses in the academic world are not predominantly concerned with writing but with reading. Maciel, Marmet and Celia

(1983) reinforce that the objective of ESAP courses in Brazil is reading comprehension of texts.

Since only two units of each book have been analyzed, the materials analysis has allowed me to partially identify what types of texts the selected textbooks present. Thus, most texts are articles from newspapers, magazines and textbooks and were classified as informative, according to Davies's (1995, pp. 130-131) framework. These results may show the importance of the selection of text types as "understanding a written text means extracting the required information from it as efficiently as possible" (Grellet, 1981, p. 3). Therefore, the selection of appropriate text types is one of the elements that needs to be considered by teachers and materials writers, as it can be a means of enabling students to achieve this understanding.

In the case of the Information Systems undergraduate students, the selection of text types is a fundamental learning tool, as they will need to be able to read very specific texts in their academic and professional lives, mostly in order to obtain information. Even though only two units in each of the selected textbooks were analyzed, I was able to identify one informative type of text in at least one of them. Thus, Davies's (1995) assertion that "reading for learning typically, though not always, requires the selection of a predominantly informative text" (p. 132) could be used to highlight the importance of text types in ESAP textbooks. Similarly, for Halliday (1985b, as cited in Nunan, 1993, p. 9) written language can be used for action, for entertainment and for information. Shortly, in terms of purpose I believe that the types of texts used for analysis would fit as informative.

Another implication of these results, especially for ESAP teachers, is in terms of materials evaluation. Davies (1995) proposes type of text as a first criterion for the selection of texts when designing a reading programme. Accordingly, Silberstein (1994)

advises teachers to “look for texts that are consistent with the types of reading students will need to do in English” (p. 101). It may be sound to remember that “ESP is centred on the language (grammar, lexis, register), skills, discourse and genres” appropriate to the activities connected with the discipline it serves (Dudley-Evans & St. John, 1998, p. 5).

Finally, a parallel could be drawn between the texts in the two selected units of each book analyzed and the most relevant topics for the Information Systems undergraduate students and teachers. In all the selected textbooks none of the texts analyzed in Unit 4 had topics that were considered relevant by the participants. Nevertheless, the analyses of the texts in Unit 14, although not presented in this section, showed that some relevant topics for the undergraduate students and teachers in the area, for example, ‘Operating Systems’ appeared in *Infotech* and in *Inglês.com.textos para Informática*. In *Basic English for Computing* the topic was ‘Web Pages’, which may be linked with another relevant topic: ‘Internet’.

The following section discusses the types of tasks used in the selected textbooks.

4.1.3 What Types of Task Do the Selected Textbooks Propose?

In order to identify the types of tasks present in the four selected textbooks I will adopt Davies’s (1995) framework of ‘passive and active’ reading tasks, along with the findings from Tomitch (2000), Nóbrega (2002) and Ferreira (2003) about reading activities in EFL and ESP contexts. McDonough and Shaw’s model (1993) for an internal evaluation will also be followed.

The aim of this research question is to identify what types of reading tasks (passive or active) the selected textbooks favor. For this purpose reading tasks from

three units (units 4, 9 and 14) of each book were analyzed. At this point it is important to mention that only one task has been chosen from each unit. The reason for this is that the number of reading tasks varies from one book to another and that it would be more reasonable to deal with the same amount of tasks in each book. The criteria established for task selection was similar to that used for the study of text types in the previous section; in other words, tasks and texts that were part of a reading component. The reading tasks or activities selected were thus the ones preceding or immediately following the text (frequently identified under the headings ‘reading’ or ‘text’) (see Appendices B and G).

To begin with, comparing the books published in Brazil with those published abroad the results show that no ‘passive’ tasks are found within the six tasks analyzed in the Brazilian books and very few in the books published abroad (see Table 18).

The results of the analyses carried out in the four ESP textbooks and used for the discussion of types of tasks are shown in Tables 18 and 19 below:

Table 18 – Number of Passive reading tasks found in the three units of each of the selected textbooks. Adapted from Davies (1995), Tomitch (2000), Nóbrega (2002) and Ferreira (2003).

| Passive Reading Tasks | Basic English for Computing | Infotech | Reading Strategies for Computing | Inglês.com.textos para Informática | Task/ Total |
|---|-----------------------------|----------|----------------------------------|------------------------------------|-------------|
| Multiple-choice | 0 | 0 | 0 | 0 | 0 |
| Literal Comprehension Questions | 0 | 0 | 0 | 0 | 0 |
| Gap Completion | 1 | 1 | 0 | 0 | 2 |
| True/false Questions | 0 | 0 | 0 | 0 | 0 |
| Vocabulary Study | 0 | 0 | 0 | 0 | 0 |
| Dictionary Study | 0 | 0 | 0 | 0 | 0 |
| ‘Speed Reading’ | 0 | 0 | 0 | 0 | 0 |
| Renumbering of sections of text on page | 0 | 0 | 0 | 0 | 0 |
| Textbook/Total | 1 | 1 | 0 | 0 | 2 |

Table 19: Number of Active reading tasks found in the three units of each of the selected textbooks. Adapted from Davies (1995), Tomitch (2000), Nóbrega (2002) and Ferreira (2003).

| Active Reading Tasks | Basic English for Computing | Infotech | Reading Strategies for Computing | Inglês.com.textos para Infomática | Task/ Total |
|-------------------------------------|-----------------------------|----------|----------------------------------|-----------------------------------|-------------|
| Marking text target | 1 | 1 | 1 | 0 | 3 |
| Modified cloze | 0 | 0 | 0 | 0 | 0 |
| Diagram completion | 0 | 0 | 0 | 1 | 1 |
| Table completion | 0 | 1 | 0 | 0 | 1 |
| Labeling of text/diagram | 1 | 0 | 0 | 0 | 1 |
| Sequencing cut-up units of text | 0 | 0 | 0 | 0 | 0 |
| Prediction | 0 | 0 | 0 | 0 | 0 |
| Review of Books | 0 | 0 | 0 | 0 | 0 |
| Précis/Summary | 0 | 0 | 0 | 0 | 0 |
| Recall | 0 | 0 | 0 | 0 | 0 |
| Note making | 0 | 0 | 0 | 0 | 0 |
| Inferencial Comprehension Questions | 0 | 0 | 2 | 2 | 4 |
| Textbook/Total | 2 | 2 | 3 | 3 | 10 |

These results can be compared to Ferreira's (2003), since the textbook *Reading Strategies for Computing* was analyzed in her study and has also revealed very few 'passive' tasks in its three units. In relation to 'active' tasks there is a balance between Brazilian books and foreign books. The Brazilian ones presented three 'active' tasks each, compared to an average of two tasks found in each foreign book.

An overview of the results shows that 'active' reading tasks are the type of task predominantly used as part of the reading component in the selected textbooks, thus confirming the findings in Ferreira's (2003) work, which revealed the predominance of 'active' tasks in ESP textbooks. Interestingly, the prevailing types of 'active' tasks are '*Inferential Comprehension Questions/Tasks*' (Ferreira, 2003) and '*Marking/Highlighting of Text Targets*' (Davies, 1995). Similarly, in Ferreira's (2003) study '*Marking/Highlighting of Text Targets*' was identified as the most common type of

‘active’ task, followed by ‘*Inferential Comprehension Questions/Tasks*’. The other types of tasks identified in the textbooks are ‘*Diagram Completion*’, ‘*Table completion*’ and ‘*Labeling of text and/or diagram*’, categorized by Davies (1995) as ‘active’. Also classified as ‘active’ tasks according to Davies (1995) none of the following types of tasks could be found: ‘Modified Cloze’; ‘Sequencing of cut-up units of text’; ‘Prediction’; ‘Review of book’; ‘Précis/Summary’; ‘Recall’ and ‘Note-making’. This may be due to the fact that only one instance from each textbook was analyzed.

‘Gap-Completion’ tasks, which are considered ‘passive’ in Davies’s (1995) categorization, were found twice and are the only samples of ‘passive’ tasks encountered. It might be appropriate to mention, at this point, an issue raised by Ferreira (2003) in relation to the dichotomy ‘passive or active’, which may be applied to the analysis of one of the passive tasks found in *Infotech* (p. 18). In this type of ‘Gap-Completion’ task, the words needed are not provided. Consequently, students will either have to resort to their background knowledge or ‘recall’ the needed words from the text previously read. Some students may go back to the text in order to find the words or even to check; re-reading and identifying these words will ‘force’ students to approach the text in a deeper and more interactive way. Thus, as Ferreira (2003, p. 55) suggests, “the degree of passiveness” in this exercise “might be questioned”. This kind of approach to a traditional task such as ‘Gap-Completion’ may indicate that authors are becoming aware of the importance of tasks and are finding new ways of making traditional tasks more meaningful to students.

The four examples of ‘Comprehension Questions’ encountered (see Appendices G, J, K and L) reinforce the need for “a new opening in the framework for ‘Inferential Comprehension Questions/Tasks’” made by Ferreira (2003, p. 62) in relation to Davies’s (1995) classification. A view which is also shared by Tomitch (2000) as she

argues that “there are different types of questions and some may be considered more active than others” (p.88). An example taken from *Reading Strategies for Computing* (Unit 9, p. 122) demonstrates the use of an inferential question after students have read the text (see Appendix L):

TASK 1

Você acha que o título é apropriado ou gostaria de sugerir algo diferente?

In this case the highlighted words “você acha” and “gostaria de sugerir” give the reader a purpose to interact with the text, where s/he may find a reason to agree or disagree with the title given to the article. Moreover, the question tries to generate/develop a critical attitude in the reader.

Another example of an inferential question comes from *Inglês.com.textos para Informática* (Unit 14, p. 90) (see Appendix J):

b) Que outros tipos de sistemas operacionais você conhece?

This time the student will not find the answer in the text, but will have to use her/his previously acquired knowledge and ‘recall’ the information that s/he knows on the topic.

Through the analysis, a type of exercise which might be similar to that labeled by Ferreira (2003, p. 61) as ‘Diagram Interpretation’ combined with a ‘gap-completion’ exercise has also been found in *Basic English for Computing* (see Appendix B). As the words needed for the gap-completion were in the diagram, which the students were supposed to study, the exercise was identified by this researcher as a gap-completion task, although I believe that “the degree of passiveness” is questionable again.

The examples of ‘Table-Completion’ and ‘Diagram Completion’ followed the traditional types frequently found in EFL/ESP textbooks (see Appendices I and M).

Basic English for Computing has an interesting example of ‘Labeling’, which is another predominant ‘active’ task in the textbooks analyzed. It starts as a kind of matching pictures (Web-pages) and words (labels) and then through matching the pictures with the paragraphs, students are ‘indirectly’ labeling the texts (see Appendix C). This type of exercise requires students to use their background knowledge on the topics and on the type of information they expect to find in each web page, making hypotheses and checking. Besides, they may need to ‘recall’ some lexical knowledge.

The last two examples of ‘active’ tasks according to Davies’s (1995) classification were ‘Marking text target’ (see Appendices E and N) found in *Infotech* and *Basic English for Computing*.

To sum up, in order to try to find out what type of tasks the selected textbooks bring I carried out an internal evaluation (McDonough & Shaw, 1993) of three units (4, 9, and 14) in each of the selected textbooks. Thus, to have a balanced amount of tasks, one task from each unit was selected and analyzed based on Davies’s (1995) classification of tasks. This analysis has allowed the identification of the fact that in the three units analyzed in each textbook ‘active’ reading tasks predominated, thereby confirming the findings in Ferreira’s (2003) study.

4.1.4 In the Light of the Relevant Literature, to What Extent do the Texts and Tasks Found in the Selected Textbooks Foster Independent Learning?

Literature in the area of learner independence seems to give support to the conception of materials, which would include texts and tasks, as a means of promoting

independent learning. As Nunan (1988) suggests, materials “should also foster independent learning by raising the consciousness of the learners and making them more aware of the learning process” (p. 99). Therefore, it is my contention that there may be a relationship between text topics, text types, active reading tasks and learners independence.

In the case of reading tasks, this consciousness and awareness may be linked with the use of strategies in reading comprehension and as a consequence ‘give birth’ to a more independent learner. In order to perform an active task readers must get involved in the reading process to build a coherent mental representation of the content of the text and the use of strategies will help readers in building this mental representation. I believe that an important reason for using this type of task is that learners can be trained to use reading strategies (e.g. skimming, scanning, prediction) and gain confidence to do that by themselves. For instance, pre-reading activities that involve prediction, considered an active reading task according to Davies (1995), could be applied for this purpose.

To reinforce this point, Grellet (1981) suggests that “it is possible, for instance, to develop the students’ powers of inference through systematic practice, or introduce questions which encourage students to anticipate the content of a text from its title and illustrations...” (p. 8). To exemplify this idea, the task taken from one of the units selected in *Reading Strategies for Computing* (Oliveira, 1998, Unit 9, p.122) may be used again as it involves readers making inferences to judge the suitability of a text title:

TASK 1

Você acha que o título é apropriado ou gostaria de sugerir algo diferente?

It should be pointed out here that although only twelve tasks from the four selected textbooks were analyzed, the results showed that four of them were, as the example above, *inferential comprehension questions/tasks*.

Just and Carpenter (1987) emphasize that “what is learned depends on the learning task” (p. 404) and, as previously mentioned, in the case of ESAP students learning is their chief objective for reading in a foreign language. Tomitch (2002) referring to the role played by teachers in reading suggests that one possible way through which they can help readers is by giving them the strategies they need. Consequently, it may be assumed that active tasks can be a valuable instrument in this direction and would fit this purpose. Moreover, the fact that active tasks predominate in ESAP textbooks (Ferreira, 2003), a finding which was also confirmed in this study, might mean that teachers may be able to help and train students to apply reading and learning strategies through the use of such material.

Based on the discussion above and on previous research, I believe that, for ESAP learners, independent learning might involve using texts related to their area of specialization and informative texts together with active reading tasks. Therefore, Information Systems undergraduate students’ autonomy may be promoted through the use of texts related to the topics identified as relevant in the answer to the first research question and informative texts, which allow these students to learn from text, as well as those analyzed in the second research question, and finally a variety of active reading tasks, which also help fostering independent thinking.

To sum up, research and scholars in the ESAP area have confirmed a relationship between text topic and motivation which can be considered an important element in helping learners to become independent. This study has shown that the text topics present in the selected textbooks match those graded by the Information Systems

undergraduate students and thus may be used in order to help independent learning. Another possible contribution towards autonomy may be given by the practice students gain from using the types of texts which often appear in their subject area, which have been identified in one of the units from each of the textbooks in this study as informative texts. Finally, the use of active reading tasks as a means of training students to apply different reading strategies may be emphasized as a basic element leading to independent learning. Therefore, their predominance throughout the twelve tasks analyzed from the selected textbooks may serve this purpose.

CHAPTER FIVE

FINAL REMARKS

This chapter is divided into four main parts: Final Considerations, The Limitations of the Study, Suggestions for further Research and Pedagogical Implications.

5.1 Final Considerations

The present research had two main objectives. The first one was carried out through data collection in order to try to identify if the text topics presented in the four selected ESAP textbooks in the computing area matched the topics suggested and perceived as relevant by the undergraduate students and teachers of Information Systems courses from two distinct tertiary level institutions, in Santa Catarina. The second involved the analysis based on the use of Davies's (1995) framework for the classification of different types of text and for categorizing tasks (active and passive), in order to find out the types of texts and tasks present in these textbooks.

For the data collection, the students and professionals in the Information Systems undergraduate courses completed a checklist grading different text topics according to their relevance and the results showed that the topics used in the selected textbooks matched those graded by the participants in this study. These results also showed that most of the topics in the selected material were perceived as of 'high' or 'medium' relevance and that only three topics were graded as of 'low' relevance. Furthermore, this researcher could observe that the amount of information on each topic

varied from one textbook to another. Still, the connection between subject-specific topics and motivation was discussed as a means of showing that these topics could be considered instruments to motivate reading. Therefore, in relation to choice of topics I believe that any of the textbooks selected would be appropriate for the teaching of ESAP to Information Systems undergraduate students.

Concerning types of text, a 'working model' for carrying out an 'internal' and an 'external' evaluation of the selected textbooks was applied in conjunction with Davies's (1995) framework for the classification of text types with reference to social function and readers' purpose. As a result of the analysis, informative texts were identified as predominant in the selected units. This researcher assumes that the four textbooks selected would fit the teaching of ESAP to Information Systems undergraduate students due to the fact that informative texts are probably among the types of texts that these students will encounter in their professional lives and, as a consequence, could influence their motivation to read.

For the identification of the types of tasks proposed in the textbooks, three units from each book were chosen and one task from each unit was analyzed applying Davies's (1995) framework of 'passive' and 'active' reading tasks. The results signaled the predominance of 'active' reading tasks, thus confirming Ferreira's (2003) findings. Therefore, in relation to these types of tasks, it is possible to assume that any of the selected textbooks could be chosen for the teaching of ESAP to Information Systems undergraduate students. The identification of the types of texts and tasks in the material analyzed has allowed me to try to establish a connection between these aspects and their use to foster independent learning.

In spite of these considerations, the fact that the Brazilian National ESP Project has identified reading comprehension as the objective of ESP courses in Brazil needs to

be taken into account. Consequently, the two textbooks published in Brazil (*Reading Strategies for Computing* and *Inglês.com.textos para Informática*) could be considered more appropriate as they focus specifically on reading. Nevertheless, assuming that the level of English of Brazilian undergraduate students usually varies from basic to pre-intermediate, *Inglês.com.textos para Informática* could be viewed as perhaps the most appropriate choice due to the fact that *Reading Strategies for Computing* is aimed at intermediate to upper-intermediate level students (see Section 4.1.2.3).

5. 2 Limitations of the Study and Suggestions for Further Research

Some limitations need to be considered when interpreting the results:

1. It was part of the purpose of this research to include, among the participants, the undergraduate students and teachers from the Information Systems course at the Federal University of Santa Catarina. However, as one of the criteria for defining the appropriate semesters to apply the checklist was having ESAP as part of the course curriculum, this intention had to be left aside due to the fact that the Information Systems course at UFSC did not meet this criterion.

2. Due to the fact that the checklist was the only means used for collecting data, no additional personal information concerning the participants (i.e. age and sex) or connected to their motivation in reading the topics listed, was given to complement this study.

3. A new checklist could be created and applied using the suggestions given by the participants in order to verify participants' response to these suggestions and to check their presence in the selected textbooks.

4. As the students and teachers involved in the research came just from two tertiary level institutions in the state of Santa Catarina, in Brazil, extensive research in other tertiary level institutions, from other Brazilian states need to be further developed in order to have a broader view.

5. The amount of units analyzed in relation to types of text and the number of tasks analyzed in each unit of the selected material need to be enlarged in order to provide a more comprehensive and accurate view of the textbooks selected.

These limitations can be seen as suggestions and stimuli for further research.

5.3 Pedagogical Implications

The fact that “ESP is essentially a materials- and teaching-led movement” should be taken into account, since its expansion through the creation of new undergraduate courses has increased the number of teachers and consequently their responsibility in choosing appropriate materials to be used in their classes. In addition, the emphasis on reading skills identified through the Brazilian National ESP Project (Deyes, 1984) and the subject specificity of each ESAP course show that these are important areas that need to be considered by both teachers and materials writers. Moreover, research has shown that the types of texts and the types of tasks selected play a significant role in the teaching of reading. In order to try to help ESAP teachers to find the most appropriate material to fit their teaching situation, the use of ‘internal’ and ‘external’ evaluation processes, mainly composed of headings and questions (McDonough & Shaw, 1993), has been suggested and applied for the analysis of texts and tasks in this study. Finally, as McDonough and Shaw (1993) emphasize, the chosen materials need first to be implemented and feedback from the students has to be given in

order to determine their success. Therefore, it is essential for ESAP teachers to remember that materials selection and evaluation are not simple enterprises, even though they may be seen as an asset these teachers should pursue.

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