Learning Technical Terms from the Textbook vs Learning Technical Terms from the Technical Dictionary

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Abstract

This study was conducted to find out whether the technical dictionary is the better alternative than the specialised textbooks in learning technical vocabulary amongst students pursuing a major Bearing in mind that technical vocabulary can also be learned from the textbook via lexical familiarisation devices, it was, however, earlier assumed that the technical dictionary may be a more effective tool to learning technical vocabulary in that every new term is normally carried and explained in dictionaries. Data for the study was obtained from a textbook sample derived from a set of 5 different introductory business textbooks for beginner undergraduates. The textbook sample comprises 500 explained terms, which comprise the first 100 terms from each textbook. Two business dictionaries were used in combination to check the textbook terms' availability. The results of this study suggest that the textbook may be superior to the technical dictionary in learning technical terms in the students' major. Out of all the explained terms from the textbook sample, a quarter was not found in the technical dictionary, suggesting that students could be better off learning these terms via lexical familiarisation from the textbook itself.

Keywords: Business, lexical familiarisation, technical dictionary, technical terms, textbook

Introduction

When students new to a specialised subject read specialised textbooks, one of the problems they may encounter while reading is the technical vocabulary in the textbooks. Unfamiliarity with the technical vocabulary in a specialised subject may impede comprehension while reading. Knowledge of the technical vocabulary can be crucial in reading specialised textbooks.

> A learner's progress in a content area subject – such as science,
> geography or economics – depends to a large extent on his ability to
> understand the terminology and concepts of that subject. (Williams,
> 1981:49)

The occurrence of technical vocabulary in specialised textbooks may be
unavoidable. By and large, the common practise among students is that
when they have problems with new vocabulary, they would consult the
dictionary Likewise they may believe that in order for them to acquire
meaning of unfamiliar technical terms to help them when reading their
specialised textbooks, they need to seek help from the technical dictionary
Considering the proliferation of technical dictionaries in many subjects
today, there should therefore be few problems in tackling technical
vocabulary to new readers who have to read specialised textbooks. This is
perhaps one of the common views that is held in vocabulary learning.

There is also another idea concerning technical vocabulary learning;
learning technical vocabulary from the textbook itself. Williams (1985) and
Koda (2005) maintain that authors would normally explain words they
think are difficult to their readers. This, therefore, suggests that besides the
technical dictionary, readers can learn new vocabulary from the textbook
itself. Williams refers to this as 'lexical familiarisation' (LF). He elaborates
that:

> In the case of inferring from context, other words contribute meaning
> to the unfamiliar word in an unplanned, incidental manner However,
> in the case of lexical familiarisation, there is intention on the part of
> the author During the process of writing, the author in effect pauses
> and thinks: "My reader probably does not know the meaning of the
> term I have just used. I must explain it in some way without disrupting
> the flow of my writing.
> (1985:123-124)

Briefly, lexical familiarisation can be understood as linguistic devices used
by writers to explain meaning of unfamiliar words or terms to help the
reader in their reading. Some examples of LF devices planted by writers are
definition, exemplification, synonyms and illustrations, etc. (Bramki and
Williams, 1984; Williams, 1985; Handee, 1996). LF, therefore, suggests that
there is another avenue for students to learn technical vocabulary Based on
the ideas described, there are now, therefore, two means by which students
can learn technical vocabulary; one from the technical dictionary and the
other, from LF devices deliberately supplied by textbook writers.

I have carried out a study to determine which of the two is the more
helpful to the reader in learning technical terms, the technical dictionary or
the textbook itself. To do this, I need to analyse the presence of technical
terms in both mediums, specialised textbooks and technical dictionaries.

The early assumption I made was that technical dictionaries might be more helpful than specialised textbooks simply because the dictionaries may accommodate all the technical terms carried by the textbook, and that they would all be explained by the lexicographers. In contrast, my other assumption was that there would be technical terms in the textbooks which may escape explanation by textbook writers, simply because textbook writers are not lexicographers. My research question is thus worded below·

> Which is the more helpful in learning technical terms while a student is pursuing a major· the specialised textbook or the technical dictionary?

To obtain the answer to the question above, I would first like to make a conditional assessment. If the technical dictionary accommodates all the technical terms carried by the textbook and if the textbook fails to explain some of the technical terms it carries, I can therefore make a simple assessment or conclusion that the dictionary is more helpful to the reader than the textbook. If, however, the technical dictionary does not carry many of the technical terms found and explained in the textbook, I can therefore make a simple conclusion that the textbook is more helpful to the reader in learning unfamiliar technical vocabulary

Data and Methodology

In order to ensure that there is technicality in the vocabulary I wish to study, I have decided to focus my research on the field of *business*. To carry out the study, first, a small textbook sample was selected. The sample was taken from a set of five different *introductory* business textbooks. Although the five textbooks are written by different authors, their levels are the same in that they are all meant for an *introductory course*. Only the very first 100 explained terms from each textbook were selected. In other words, the terms were selected only from the early part of each textbook.

The introductory textbooks were chosen because it was assumed that since this level is for students new to the subject, the writers may need to introduce numerous new terms to familiarise them with the new subject. The first 100 terms were selected from each textbook because it was assumed that they could possibly be among the most common terms in introductory business courses, hence the higher possibility for them to be found in the technical dictionary To have a closer look at the textbooks selected, some of their general features and their chapter structure will be briefly described.

The first textbook, titled *Business Principles and Management: Ninth Edition* was written by Everard and Burrow (1990). This book is divided into 7 major units with each unit addressing a major business topic. Each major unit is then broken down into several subtopics. Each subtopic is dealt with

in a separate chapter. For example, for unit 1, *Business and its Environment*, the unit is made up of 3 subtopics namely, *Characteristics of Business*, *Social Environment of Business* and *Economic Environment of Business* in chapter 1, 2, and 3 respectively. There are altogether 25 chapters in the 7 major units in this textbook.

The second textbook is titled *Business: its Nature and its Environment: An Introduction. Eighth Edition*, was written by Glos, Steade and Lowry (1976). Quite similar to the first textbook, this book is divided into eight major topics in eight major units. Each major topic is then broken down into several subtopics. Each subtopic is dealt with in a separate chapter. For example, in unit 2, the major topic is *Business Ownership, Organization and Management* This topic is made up of four different subtopics, namely, *Unincorporated Businesses, Incorporated Businesses, Organizingfor Management* and *Management Activities* dealt with in four different chapters. There are altogether 29 chapters held by eight major topics in this textbook.

The third textbook is titled *Business Studies: Second Edition* written by Needham and Dransfield (1994). The book is divided into 24 chapters dealing with 24 different topics. Whereas the two previous textbooks combine related subtopics into a major unit, this textbook does not, preferring to separate them from each other For example, *Business Organization in the Private Sector* and *Business Organization in the Public Sector* appear in two different chapters separated by another chapter in between, i.e. *Small Business Enterprise*.

The fourth textbook is titled *Business for Non-Business Students* written by Campbell (1994). Like the first two textbooks, this textbook is also broken down into six major topics called sections. Each major section is then divided into several subtopics carried by separate chapters. For example, in section 1 which carries a major topic *Business Basics*, the three subtopics dealt with in three separate chapters are *Basic Concepts in Business*, *The Objectives in Business* and *The Location of Business*. There are altogether six major sections carrying 28 subtopics in 28 separate chapters.

The fifth and final textbook is titled *Business Studies Today* written by Ryan and Richards (1991). This textbook is also similar to the three textbooks discussed above in which its contents are broken down into five major topics. Each of the major topics is divided into its subtopics carried by separate chapters. For example, in the major topic, *Financing Business Activity*, three subtopics in three separate chapters are found, namely, *Financial Accounting and Financial Control, The Finance of Trading Activities* and *The Capital Financing of Business*. Altogether there are five major topics carrying 22 different chapters.

It appears that all the textbooks begin with the basics. For example, if we take a look at the first two early chapters of Campbell's (1994) textbook, the writer addresses *Business Basics* and *Business Organisations* in the first and second chapters of the textbook respectively. After dealing with the beginning topics in business, the middle part of most of the textbooks covers

the more complex topics. Among others, these include the finance and accounting functions and the production and marketing functions in business. As for subsequent topics covered in the final part of the textbooks, these include the functions of management in business and the various types of influences (for example external influences and the influence of the economy) on business. Some also include topics which address the form of business in the future.

When looking at the sequence of the textbook contents, it is noticed that there are variations from one textbook to another. A closer reading, however, reveals that their contents coverage is nearly the same across the textbooks. For example, one business topic, i.e. *Business Organisation*, is dealt with in all the textbooks although in one textbook it is given a different name, i.e. *Business Ownership*.

Apart from their introductory feature, it appears that another characteristic of the textbooks is the emphasis placed on the learning of business vocabulary. This is explicitly stated in two of the textbooks. In the preface page of Everard and Burrow's (1990) textbook, for example, the learning of key business terms is listed as one of the objectives of their textbook. In the preface page of Glos, Steade and Lowry's textbook, it is explicitly indicated as one of the objectives of their textbook. The extract is shown below·

> Students acquire business vocabulary. As a result, reading newspapers and magazines or listening to radio or watching television becomes more meaningful. The course provides a first exposure to many new terms, some of which will be remembered and, by the end of the course, will become a part of the student's vocabulary Other terms will require the reinforcement that business majors will receive in subsequent courses.
> (1976:iv)

Although the learning of business vocabulary is not stated in the other textbooks, this does not mean that business vocabulary learning is not given attention in the three other textbooks. The distribution of business vocabulary and their explanation in the chapters of the other three textbooks suggest that business vocabulary learning is also not neglected by the other three textbooks.

The figures below illustrate the distribution of the 100 terms in each textbook. The diamond shaped markers on each line represent the number of terms found in the respective pages of each textbook. For example, the single marker on the seventh line on page 45 in Everard and Burrow's textbook in figure 1 below means there are seven explained terms found on that single page in the textbook. It can also be seen from the figures that there are occasional gaps between the diamond markers. The gaps may be due to exercises and assignments at the end of the chapters of the textbook sample.

In describing the chapters where the terms come from, the word *approximately* is occasionally used below. Since my aim was to select the first 100 terms from each textbook, naturally, the last few terms from each textbook may come from the first few pages of a new chapter.

Figure 1. The distribution of terms in Everard and Burrow's textbook sample
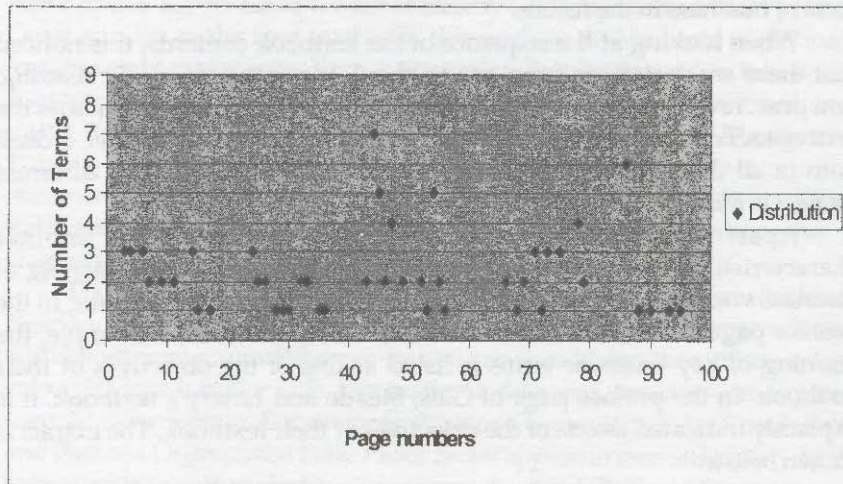

In Everard and Burrow's textbook, the 100 terms selected were from the first five chapters. Generally, the terms appear to be distributed throughout the five chapters of the textbook.

Figure 2. The distribution of terms in Glos, Steade and Lowry's textbook sample
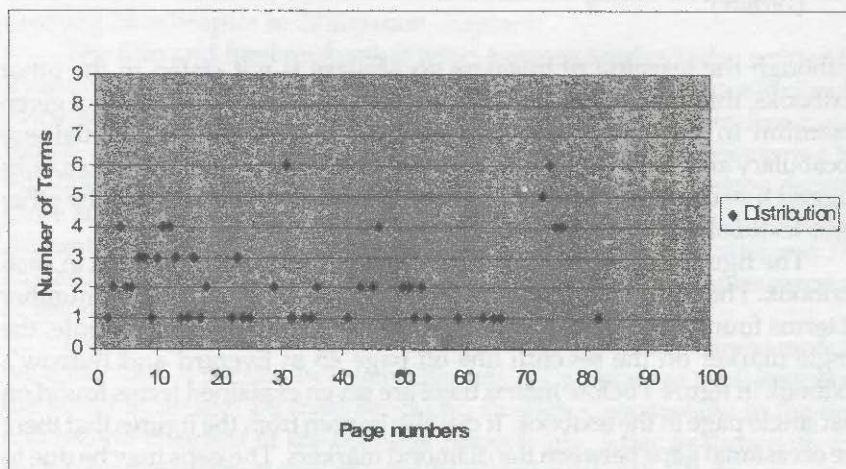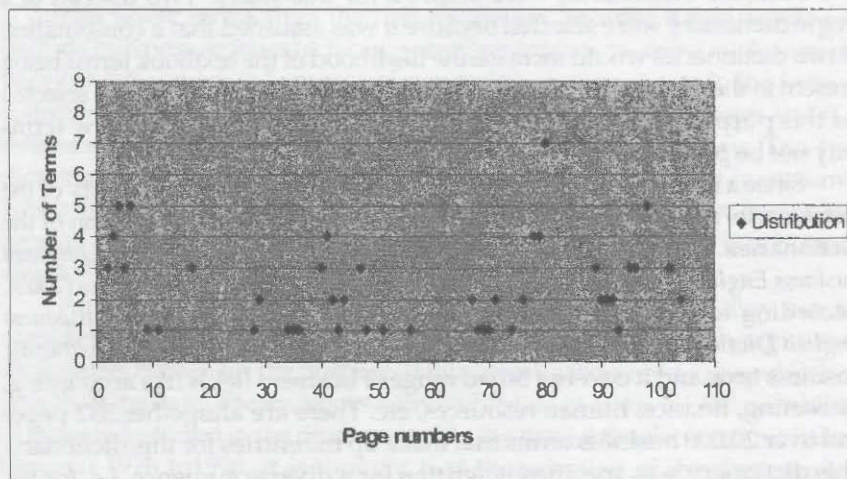
In Glos, Steade and Lowry's textbook, the 100 terms were selected approximately from the first four chapters. The terms also appear to be distributed throughout the four chapters of the textbook.

Figure 3. The distribution of terms in Needham and Dransfield's textbook sample
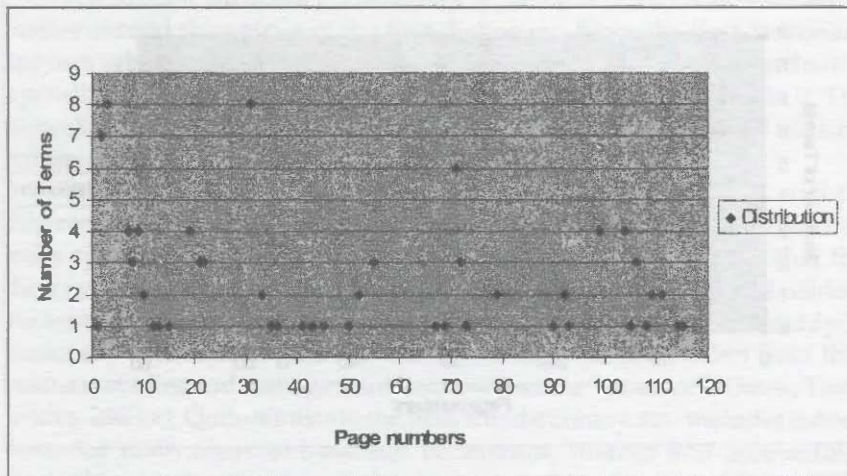
In Needham and Dransfield's textbook, the terms were selected approximately from the first six chapters. The terms also appear to be distributed throughout the 6 chapters of the textbook.

Figure 4: The distribution of terms in Campbell's textbook sample

In Campbell's textbook, the terms were selected approximately from the first thirteen chapters. The terms also appear to be distributed throughout the thirteen chapters of the textbook.

Figure 5: The distribution of terms in Ryan and Richard's textbook sample
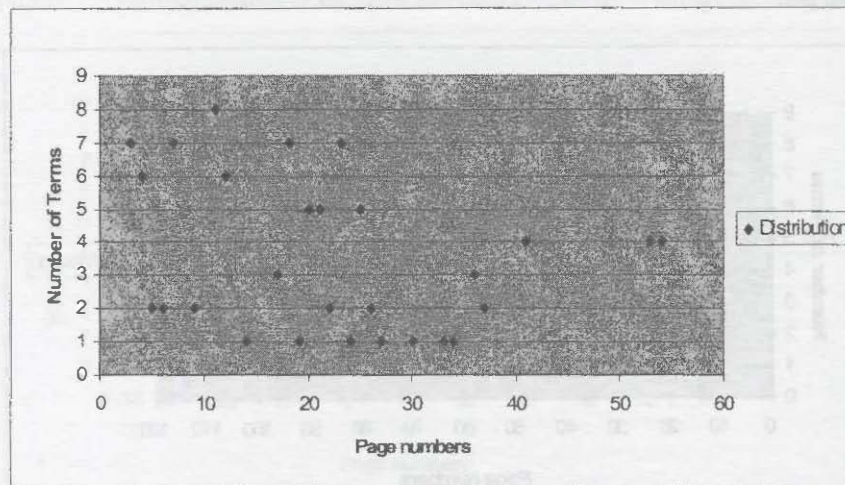
Finally, in Ryan and Richards' textbook, the terms were selected approximately from the first four chapters. Although the terms were generally distributed throughout the chapters, many can be seen to be clustered at the beginning part of the textbook.

All the 500 terms explained in the textbook sample were checked to see whether they are also found in a set of two business dictionaries. A set of two business dictionaries were selected for this study Two instead of a single dictionary were selected because it was assumed that a combination of two dictionaries would increase the likelihood of the textbook terms being present in the dictionaries. In other words, if only one dictionary was selected for this purpose, it would, perhaps, be less complete, i.e. some new terms may not be present in it.

Since a set of two dictionaries were used to check the availability of the technical terms explained in the textbook sample, a brief description of the dictionaries is therefore necessary. The first dictionary is titled *Longman Business English Dictionary* (2000) and the second, *Dictionary of Business* (2003). According to the publisher of the first dictionary, the *Longman Business English Dictionary*, it is based on analysis of millions of words of authentic business texts and it covers a broad range of business fields like accounting, marketing, finance, human resources, etc. There are altogether 532 pages and over 20,000 business terms that make up the entries for this dictionary This dictionary was specifically written for a diverse audience, i.e. for the

general public, teachers and students at the advanced, upper intermediate and intermediate level. The first dictionary was also chosen as it appears to be one of the popular dictionaries in the market. A surf of the Internet reveals that this dictionary is one of the earliest and one of the most frequent to appear on the Google search engine, suggesting that it is one of the leaders in the market.

The second dictionary, *Dictionary of Business* (2003) was selected to further extend the entries of the first dictionary Since the first dictionary appears to be written to accommodate more general business terms, there is a possibility that less common, narrower terms may not be found in it. The second dictionary was therefore chosen to compensate for any missing entries in the first dictionary

Compared to the first dictionary, the second dictionary is slightly different in that it appears to include business terms which are narrower or more specialised in nature. In its preface, the writers maintain that the dictionary was written to also cater to the needs of more advanced business students (such as those taking MBA courses) and those who are already in business "who need a guide to the increasingly jargon-ridden field that business studies and management has now become" (Bannock, Davis, Trott, Uncles, 2003:v). Quite similar to the first, this dictionary also includes entries from the main areas in business: economics, finance and accounting; marketing, communications and consumer analysis; business strategy, etc. Apart from business terms from those areas, it also includes terms from other fields which are relevant to business. These are terms from psychology, sociology, statistics, mathematics, computer science, information systems, operations, research, etc. The dictionary is written for an international audience but biased more towards the West, especially British and American audiences. In terms of total number of entries, this dictionary is much leaner It carries fewer terms than the first dictionary because it has decided to exclude business terms which carry obvious general meaning such as *public utility* or *table* which is "a means of presenting statistical data in the form of columns and rows" (Bannock et al., 2003:v). It contains 393 pages and it is estimated that there are about 2,000 terms in this dictionary The two dictionaries seem to complement each other. Whereas the first carry terms which appear to be more common in business, the second, apart from some general business terms, appears to carry terms which are much more specialised in business.

Another important feature of both dictionaries is that they can be considered as fairly new dictionaries in the market. It is thought that dictionaries chosen for the purpose of this investigation need to be published later than the dates the textbooks were published to allow for the possibility of terms to be found in the dictionaries. As the five textbooks were published between 1976 to1996, it is thought that the selection of the dictionaries, published in 2000 and 2003 respectively, is thus proper for this purpose.

Before checking the availability of all the textbook terms in the dictionaries, there was first a need to check them against each other in the textbooks as there are cases in this corpus where similar terms are explained or familiarised by the writers. This is hardly surprising considering the fact that the business textbooks are roughly of the same level, i.e. they are all introductory textbooks. Their contents are thus more or less the same. For example, the term *sole proprietorship* is explained by all the five textbooks and the term *unlimited liability* is explained in three of the five textbooks. As a result of the repetition of some terms, therefore, not all the 500 terms need to be checked in the dictionaries. There are altogether 104 terms which are repeated and 396 terms that are not repeated which need to be checked in the dictionaries.

Results

The pie chart below illustrates the proportion of explained terms in the textbook sample found and those not found in the dictionaries.From the pie chart, it can be seen that the majority, i.e. about two-thirds of the terms explained in the textbook sample are also found in the business dictionaries. However, about a third of the terms explained in the textbook sample are not found in the dictionaries. These terms may be loosely categorised as those which appear to look like business terms and hence can be called *business terms* and those which appear to look like *non-business terms*. They are both listed in the tables below·
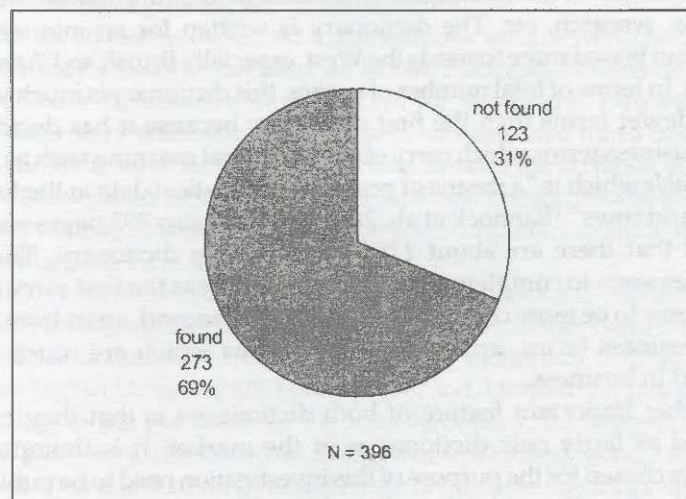
not found
123
31%

found
273
69%

N = 396

Figure 6: The proportion of explained terms in the textbook sample found /
not found in the business dictionaries

Table 1: Explained terms in the textbook sample not found in the business dictionaries categorised as business terms

1	underground economy	46	wants
2	labour participation rate	47	goods sector
3	comparable worth	48	inbound logistics
4	social responsibility	59	outbound logistics
5	rights of consumers	50	management systems
6	economic wants	51	nternal structure
7	utility	52	producers' co-operatives
8	form utility	53	common ownership co-operatives
9	place utility	54	co-ownership co-operatives
10	time utility	55	community co-operatives
11	possession utility	56	line organization
12	capital formation	57	staff organization
13	false advertising	58	volume of traffic
14	close corporation	59	defined hierarchy of authority
15	public f anchise	60	share volume
16	personal property tax	61	span of control
17	assessed valuation	62	scalar principle
18	classical theory of capitalism	63	line employees
19	income expenditure analysis	64	staff employees
20	full employment act	65	
21	freedom of choice	66	market development
22	freedom of contract	67	external acquisition
23	capital funds	68	related acquisition
24	innovistic competition	69	unrelated acquisition
25	domestic system	70	concentric diversification
26	contribution per unit	71	conglomerate diversification
27	puritan ethic	72	mixed economy
28	federal form pollution	73	land
29	tight money	74	free goods
30	bank credit card plan	75	aids to trade
31	price and wage controls		post-industrial society
32	quantified decision making	77	the planned economy
33	self-interest	78	price mechanism
34	enlightened self-interest	79	merit goods
35	articles of partnership	80	the ordinary partnership
36	secret partner	81	the statutory declaration
37	nominal partner	82	divorce of ownership and control
38	mining partnership	83	co-operatives in production
39	trust certificates or trust shares	84	co-operative joint ventures
40	economic terest groups	85	consumer councils
41	mutual help organizations	86	staff posts
42	money costs	87	cha n of command
43	The Sale of Goods Act 1979 (SoGA)	88	T e Unfair Contract Terms Act 1977
44	domestic goods	89	foreign goods
45	needs		

Table 2: Explained terms in the textbook sample not found in the business dictionaries categorised as non-business terms

1	zero population growth (b)	18	legal organizations (h)
2	baby boom (b)	19	political organizations (h)
3	baby bust (b)	20	international organizations (h)
4	system (i)	21	local government (i)
5	operations (i)	22	national government (i)
6	mechanical (element of work) (h)	23	energy (b)
7	psychological (element of work) (h) workwork) work)	24	social institution (b)
8	economic (element of work) (b)	25	ideology (b)
9	physiological needs (h)	26	pluralism (b)
10	personal (b)	27	pluralistic society (b)
11	inter-personal (h)	28	ecology (i)
12	self-actualisation (h)	29	ecosystem (b)
13	totalitarianism (b)	30	biochemical oxygen demand (b)
14	constitutional democracy (b)	31	zero discharge (b)
15	act of Parliament (b)	32	solid wastes (b)
16	megalopolis/interurbia (b)	33	frostbelt (b)
17	morals (b)	34	sunbelt (b)

In sum, there are more business terms than non-business terms which are not found in the business dictionaries. When we calculate the percentage, it was found that out of 362 business terms explained in the textbook sample, 89 or 25% are not found in the business dictionaries. This finding will be interpreted and discussed below.

Discussion and Conclusion

This finding can be considered to be rather surprising. While we may expect not to find the 34 non-business terms in the business dictionaries, the fact that 89, or 25% of the business terms were not found in the business dictionaries is thus unexpected. Considering that two dictionaries were used in combination to check the availability of the textbook terms and bearing in mind that dictionaries are compiled to include as many entries as possible, the 25% figure may be considered rather substantial.

The reasons for this can only be speculated. One possible reason why the business terms above were not found in the dictionaries is that they may be far too narrow or too specialised to be accommodated by the dictionaries. These are possibly terms like *underground economy, merit goods, innovistic competition, volume of traffic,* etc. It is speculated that since the business textbooks may take students to some remote details on some business topics, terms which emerge from these remote details may therefore not be found in the business dictionaries. It is also possible that since most dictionaries

generally tend to carry the more frequent terms as entries, the less frequent terms may thus be excluded. There may yet be another possible reason The two business dictionaries may not accommodate terms which the lexicographers feel carry obvious general meaning possibly to save entry space. These are terms like *domestic goods*, *foreign goods* and *chain of command, land.*

The results of this investigation illustrate that the technical dictionaries used in this investigation do not carry many of the business terms found and explained in the textbook sample. It therefore suggests that the textbook sample is more helpful to students than the technical dictionaries in learning technical terms. This finding seems to support the view held by Bramki and Williams (1984) who maintain that in learning technical vocabulary, even if a dictionary is available, it may not be suitable to students.

All this while, students may assume that the dictionary is the best tool for them to learn new technical terms in their major The findings of this research can perhaps change the view of teachers and students, and encourage them to rely more on the textbook if they are not able to find some new terms in the technical dictionary to learn the meaning of unfamiliar technical terms since research has shown that textbook writers do indeed explain terms they think are difficult to readers (Bramki and Williams, 1984; Williams, 1985; Handee, 1996; Amerrudin, 2007).

The above finding may have implications for the teaching of technical vocabulary in ESP. As teachers we need to sensitise students to the idea that the technical dictionary may not quite be an effective tool to learning technical vocabulary in their subject compared to the textbook. To sensitise students to the idea that the textbook is possibly a better tool for vocabulary learning than the technical dictionary, an assignment like the one below can be given to them. In a reading lesson on a topic, the teacher can get students to mark explained terms from a specialised textbook. The teacher can then get students to find their meanings in the textbook itself as well as in a technical dictionary The teacher can then direct students to form their own conclusions from this experience, based on these two questions:

a)   Can all the explained terms in the specialised textbook be also found in the technical dictionary?
b)   Which meaning explanation is seen to be more topic friendly and/or reader-friendly - the textbook or the dictionary?

The answers they obtain from this assignment may sensitise them to the idea that the textbook is possibly the better and the more helpful tool than the dictionary for learning technical vocabulary in their subject.

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