

## CHAPTER SEVEN

### CONCLUSION AND RECOMMENDATIONS

#### 7.0 Introduction

This final chapter presents a discussion of the findings followed by the pedagogical implications and recommendations of the study. It concludes with the directions for further research.

This study set out to investigate the current translation situation of scientific texts from English into Malay in Malaysia. It also investigated the internal process of translating scientific texts from English to Malay via five in-depth case studies of TAPs. The main purpose of the study was to explore causes for the slow process of translating scientific texts from English to Malay in Malaysia, which resulted in there being insufficient translated scientific texts in the Malay language at Institutions of Higher Learning. This fact made the government of Malaysia announce their decision on 27<sup>th</sup> December 1993, by the Prime Minister, to allow Science and Technology to be taught in the English language at all institutions of higher learning so that Malaysians will be able to keep themselves updated with the latest in these two fields.

Furthermore, from the findings of this study, the researcher will propose her own translation model of translating scientific texts from the source language into the target language.

#### 7.1 The Translation Process

The findings from this study via the questionnaire and interviews reveal that the translation process comprises the following steps:-

1. English language scientific text is chosen by the authorities at the publishing house (generally DBP) to be translated into the Malay language. It is handed to a chosen, experienced, part-time translator who is a subject specialist, to be translated into the Malay language. A contract is signed between the two parties.

2. The translation process is initiated by the translator in the following steps:
  - a. translation tools such as a bilingual dictionary, thesaurus, terminology lists etc are made readily available beside the translator
  - b. if working in a team, the division of chapters in a book to be translated is done and translating is started to complete the given translation task in order to meet the deadline set by the publishing house
3. Comprehension of source text in English language – the content is studied, the context, terminology, culture, syntax, semantics and style of writing in the English language text is scrutinised. The source text in English language is read at least once or twice so that the whole gist of the message is understood by the translator.
4. Translation – analysing and comprehension of the content in the English language scientific text is done while translating sentence by sentence, or if the sentence is too long, clause by clause into the target language (TL) which is the Malay language, using the translator's own intuitiveness for the TL to reproduce an equivalent version of the text in the TL. Here, the translator also looks up the equivalent meanings of words from a bilingual dictionary, terminology lists or consults his friends or rings DBP if a particular term cannot be found in the terminology lists. A few also surf the internet for information to clarify their doubts. The syntax, semantic and pragmatic processing levels put forward by Bell (1991:60), the textual, referential, cohesive and natural levels put forward by Newmark (1988:19) and the cognitive, linguistic, communicative and pragmatic approaches put forward by Sager (1994:135) are used by the translators while translating. It is ensured that the translated TL version suits the proficiency level of the target readers. The *skopos* or purpose of the translation and its function is kept in mind by the translators while translating. To solve their problems while translating scientific texts from English to

Malay, the translators use their own intuitiveness for the target language which is the mother tongue of a majority of the part-time translators in this study.

5. Reading, checking and editing of the translated version against the original version. It is ensured that the content is accurately translated and that the terminology is kept consistent.
6. Reviewing of the translated version by colleagues in the same field of specialisation is done to ensure that the translated version is translated accurately and that it can be understood by the target readers.
7. Handing in of translated version to the publishing company that commissioned the translation.
8. Proofreading and editing by editors at the publishing house. Sometimes, upon the request of the translator, the edited version is shown to the translator before publication to ensure that the information edited has not made the scientific content ambiguous or wrong.
9. Publication of translated version of book.

The above findings from this study of the steps in the translation process support generally what is also described by Rose (1981:2-4), Sager (1994:166) and Darwish (1999:7).

## **7.2 The Internal Translation Process**

The findings from the TAPs of the internal translation process revealed that while translating the scientific texts from English to Malay, the participants used all the principal direct and indirect language learning strategies put forward by Oxford (1990). Besides these language strategies, they also used some additional strategies, which the researcher claims to be the real translation strategies as they were not found in Oxford's (1990) SILL model. These additional translation strategies, which are the new findings

from this study, comprise one metacognitive and two cognitive strategies. See **Table 6.10 on page 311** for the researcher's proposed Translation Strategies Taxonomy.

The metacognitive strategy involves the use of the participants' own beliefs on how to translate based on past experience in translating and from training, and implementing these beliefs in their translation process. In other words, they have a mindset or schemata of their own on how to produce a good translation product which they closely follow.

The two cognitive strategies are as follows:

- a. the first cognitive strategy involves finding their own solutions to the problem of very long, complex sentences in the source language scientific text. All the participants decided to divide the complex language sentences into two or three shorter sentences while translating into the target language, each carrying only one idea. This solves the problem of conveying the meaning accurately. It also makes translating easier and more manageable.
- b. the second cognitive strategy involves the use of the discrimination strategy to choose the closest, matching equivalent term in the target language from two or three alternatives identified which best suits the context of situation of the text and the culture of the target readers.

For a translation task to be efficient, the researcher strongly feels that it is important for translators to use all the main direct and indirect language learning strategies proposed by Oxford (1990) together with the additional strategies stated above while translating. All these strategies have been compiled into the Translation Strategies Taxonomy as shown in **Table 6.10 on page 311**.

The findings from this study indicate that the steps in the internal process of translating comprise seven iterative steps, as given on pages 283-284, and are summarised below:-

1. planning and organising – making decisions and implementing them
2. reading and comprehension of the source language text
3. attending to only one sentence at a time
4. analysing, reasoning and understanding the information in the source language text
5. translating into the target language sentence by sentence, that is translating the difficult keywords and expressions in the sentence first, and then translating the whole sentence
6. checking and revising of completed translated sentences constantly using structured reviewing and production monitoring before proceeding to next sentence
7. performance evaluation of completed translated version in the target language

The steps followed by the participants in this study while translating are generally the same as put forward by Rose (1981), Newmark (1988), Bell (1991), Sager (1994) and Darwish (1999) although they express them differently. For example, Rose (1981) refers to the steps as preliminary analysis, exhaustive style and content analysis, acclimatisation of the text, reformulation of the text, analysis of the translation and finally review and comparison.

From the above steps of the translation process, it can be concluded that the two most used strategies while translating are the:

- a. cognitive which involves reading and understanding, translating, analysing, creating structure for input and output and,
- b. metacognitive which involves planning and organising, evaluating and monitoring strategies.

To realise the cognitive process, the core translation tool used by the participants were the cognitive strategies. According to Brown and Palincsar (1982, cited in O'Malley and Chamot 1990:8), "cognitive strategies are more directly related to individual learning tasks and entail direct manipulation or transformation of the learning materials". Here, the main task of the participants was to translate scientific texts from English to Malay and they were in fact learning both the languages further while translating. This supports what Robinson (1997:49) says that the translator is a learner. The mental processing of the information in the source language text into the target language text is facilitated by the translation tools, of which the core are the language learning and translation strategies which help the participants to understand the source text better and to reproduce it into the target language form. The researcher strongly believes that the language learning processes/strategies are transferrable to modelling translation.

The second most used strategies by the participants in the translation process were the metacognitive strategies. These strategies are important in the translation process because they involve making and implementing decisions on how to manage the translation task. This includes monitoring and reviewing the translated work during translating and evaluating the performance after completing the translation task. According to Darwish (1999:3), data derived from empirical research pioneered by Jumpelt (1961), Levy (1967), Toury (1985, 1995), Seguinot (1991), Wilss (1994), Lorsch (1995) and other researchers, have "highlighted the significance of decision making as the backbone of translation". This study too has proven this point where for each step, the participants make a decision first and then implement it, for example, to read the whole source text first, to make a summary of it, to decide on how to start translating, to decide which equivalent term to choose from two or three alternatives identified etc. According to Darwish (1999:3), "there is now general agreement among

translation researchers, educators and practitioners that decision-making plays an important part in both the translator's performance and the quality of the translation product". For a language task like translation to be successful, one needs to use a pairing of cognitive and metacognitive strategies the most besides the other language strategies. According to Brown et al. (cited in O'Malley and Chamot 1990:8), research in metacognitive and cognitive learning strategies suggests that transfer of strategy training to new tasks (here, translation tasks) can be maximised by pairing metacognitive strategies with appropriate cognitive strategies. These two strategies were the most used in the TAPs and from the background of the participants, it was seen that they are experienced, part-time translators and were able to come up with good translation products as they are subject specialists and are good in both the source and target languages. Past research by Gurnam Kaur (2000), Rubin (1975), Chamot (1994) etc. has shown that the use of language strategies in any language task yields a better performance.

The fact that all the principal language learning strategies were used in the translation task supports Oxford's (1990:1) statement that, "strategies are especially important...because they are tools for active self-directed involvement, which is essential for developing communicative competence and...result in improved proficiency and greater self-confidence. Furthermore, Oxford (1990:11) suggests that, "They are used because there is a problem to solve, a task to accomplish, an objective to meet, or a goal to attain".

From the analysis of the transcriptions of the recorded TAPs, it was discovered that while translating the participants unconsciously used all the four approaches that is, the cognitive, linguistic, communicative and pragmatic as advocated by Bell (1991), Sager (1994) and Darwish (1989,1995, 1999) in their translation models. The part-time translators who were the participants in this study questioned in their mind the original

author's meaning as presented in the source language text. Then, they tried to communicate the meaning as accurately, clearly and naturally as possible using the target language in a grammatically, smooth-flowing and natural manner and at a level which could be understood by the target readers, whom they always kept in mind. The participants also made sure that the terms used in the translation were accurate and consistent, the spelling was right and the flow of the language used was not absurd. To realise these approaches, the translation strategies (see Table 6.10 in Chapter Six for the **Proposed Translation Strategies Taxonomy**) were used as tools. The equivalent terms chosen in the target language suited the context of the situation and the culture of the target readers. The participants also fulfilled the *skopos* or purpose of the translation. They made sure that their translated version suited the language proficiency level and intelligence of the target readers. In other words, the principles put forward in the *skopos* theory by Reiss and Vermeer (1984), even though unknown to some of the participants of the study, were intuitively applied correctly by them while translating the scientific texts from English to Malay.

### 7.3 Pedagogical Implications

From the findings of the internal processes involved in the translating of scientific texts from English to Malay via TAPs, it is clear that in order to translate well, translators must be subject specialists (in this study, science specialists in their respective areas) and the facts presented while translating into the target language cannot be made ambiguous or distorted through using the target language wrongly as this will have very bad consequences on the target readers as they will lose trust in translated texts. Besides this, translators must be proficient in both the source and target languages (here the English language and the Malay language). The five participants in this study were Malays and thus they had an edge: they were native speakers of the target language, had learnt the source and target languages in school and had the correct

flair and intuitiveness for the target language while translating and this enabled them to deliver a good translation in the Malay language. The five participants who participated in the TAPs have published translated science books to their credit and are experienced part-time translators. The importance of these factors has been supported by a writer on translation, Ainon Muhammad (1979:12), who suggests that a good translator needs to fulfil these conditions: has to be good in the source language, even better in the target language, must be a subject specialist and must know the theory and practice of translation. These factors must be emphasised in the translation training programmes and it must be included in the translation curriculum.

Another implication from the findings is that all translators must be made aware of the use of the four basic approaches - cognitive, linguistic, communicative and pragmatic - in their translation process in order to produce good translation products that suit the target readers. This finding from this study means that the present translation training programmes must include a new facet, that is the approaches to use while translating. In other words, they must put into practice the major aspects of the translation models by Bell (1991), Sager (1994) and Darwish (1989,1995,1999) which depict the translation process. Furthermore, the *skopos* or aim of the translation must also be fulfilled. The proficiency level of the target language used and the terms used in the target language while translating must be suited to the language proficiency level and intelligence level of the target readers. If the translation is meant for the first year university students, then the explanation must be kept simple to ensure that the target readers understand the translated version.

To realise the cognitive, linguistic, communicative and pragmatic approaches, the translation tools must be readily available beside the translator before the translation task is embarked. These include the bilingual dictionary, thesaurus, terminology lists, writing paper, computer, pen, other books relevant to the translation task that the

translator can refer to for better understanding of the source text, the direct and indirect language strategies and the translation strategies taxonomy (see **Table 6.10** on page 311). The application of these strategies, especially the cognitive and metacognitive strategies, will ensure the successful execution of the translation task. Strategy training should also be included in all translation training programmes.

The findings from the study had a few pedagogical implications on the characteristics of a good translator, the training of translators, use of terminology and the publication of translated scientific texts in the Malay language. All these factors contribute to the reasons for the slow translation process in Malaysia.

### **7.3.1 Reasons for the Slow Translation Process in Malaysia**

As discussed in Chapter One, the process of translation of English language scientific texts into the Malay language is slow in Malaysia because of the difficulties faced by the translators, for example, problems in getting all the correct scientific terminology in the target language, doing translation on a part-time basis, not being disciplined when it comes to translating, not having all the tools of translation beside them when translating, not having the contact numbers of experts who can help them when they face problems in translation, not getting credit for translation and finally the translators feel that the payment is too low for the hard work that goes into translation. The researcher is repeating this information for reiteration purposes.

#### **7.3.1.1 Problems in Publishing**

The publishing companies take a very long time to publish the translated science textbooks in the Malay language as these have to go through the process of heavy editing and re-typing. When the translated science textbook in the target language is finally published, it becomes outdated as a new edition of the science textbook in the source language is out in the market. The publishers in Malaysia generally get the copyright approval once the source language science textbook has been in the market

for three to four years. Translating of the book takes about one or two years and then editing and publishing takes a further three to four years. All these reasons account for the published translated books which are obsolete or outdated, and thus these books do not sell well in the market. During this long process of translating, the original book would generally have been revised and a new updated version would be selling in the market and everyone would go for the updated version and choose to ignore the outdated translated text in the Malay language. Also, translated books have a very small market. Publishing companies always face losses and due to this reason, they are not happy publishing translated books.

#### **7.3.1.2 Problems in Terminology**

Fifty percent of the translators said that their translation was slow as they had problems with terminology. Forty percent had problems with the style and concord of scientific writing. Some of the terms they needed were not found in the terminology lists provided by DBP. They did not know how to go about solving this problem and were afraid of creating their own terms for the original terms in the Malay language.

#### **7.4 Recommendations**

From the discussion of the findings and the pedagogical implications of the study of the process of translating scientific texts from English to Malay, the researcher came up with a few recommendations. These are:

- a. the proposal of the Translation Strategies Taxonomy which is derived from the Language Learning Strategies Taxonomy by Oxford (1990)
- b. the need to teach the proposed direct and indirect translation strategies to all translators in all translation training institutions and to include this strategy training in the translation syllabus

- c. the need to make translators become aware of using the four approaches -cognitive, linguistic, communicative and pragmatic while translating to ensure a good translation product
- d. the proposal of the researcher's own translation model

#### **7.4.1 Proposed Translation Strategies Taxonomy**

The transcriptions of the TAPs by the five participants were analysed by the researcher on her own and then matched against the language learning strategies taxonomy put forward by Oxford (1990) and it was found that all the main direct and indirect language strategies and some additional strategies besides the language learning strategies were used by the participants while translating. From the findings, the direct and indirect translation strategies taxonomy which is derived from the language learning strategies taxonomy by Oxford (1990) as shown in Table 6.10 on page 311 is proposed. The one metacognitive and two cognitive strategies that have an asterisk and are highlighted as shown in Table 6.10 on page 311 are the additional strategies found from this study. The researcher recommends that the proposed translation strategies taxonomy be used and experimented by all translators irrespective of the pair of languages they are working with in a translation task. By using these strategies in their translation process, the researcher is of the opinion that their translation task will become easier, more accurate, faster and more systematic.

#### **7.4.2 The Need for Strategy Training for Translators**

The participants in this study were part-time translators who were working under the constraints of time and space to complete a translation task. They have to juggle between their professional jobs and translating. Thus strategy training is necessary so that they will be aware of how to go about managing the process of translation in an efficient manner under constraints.

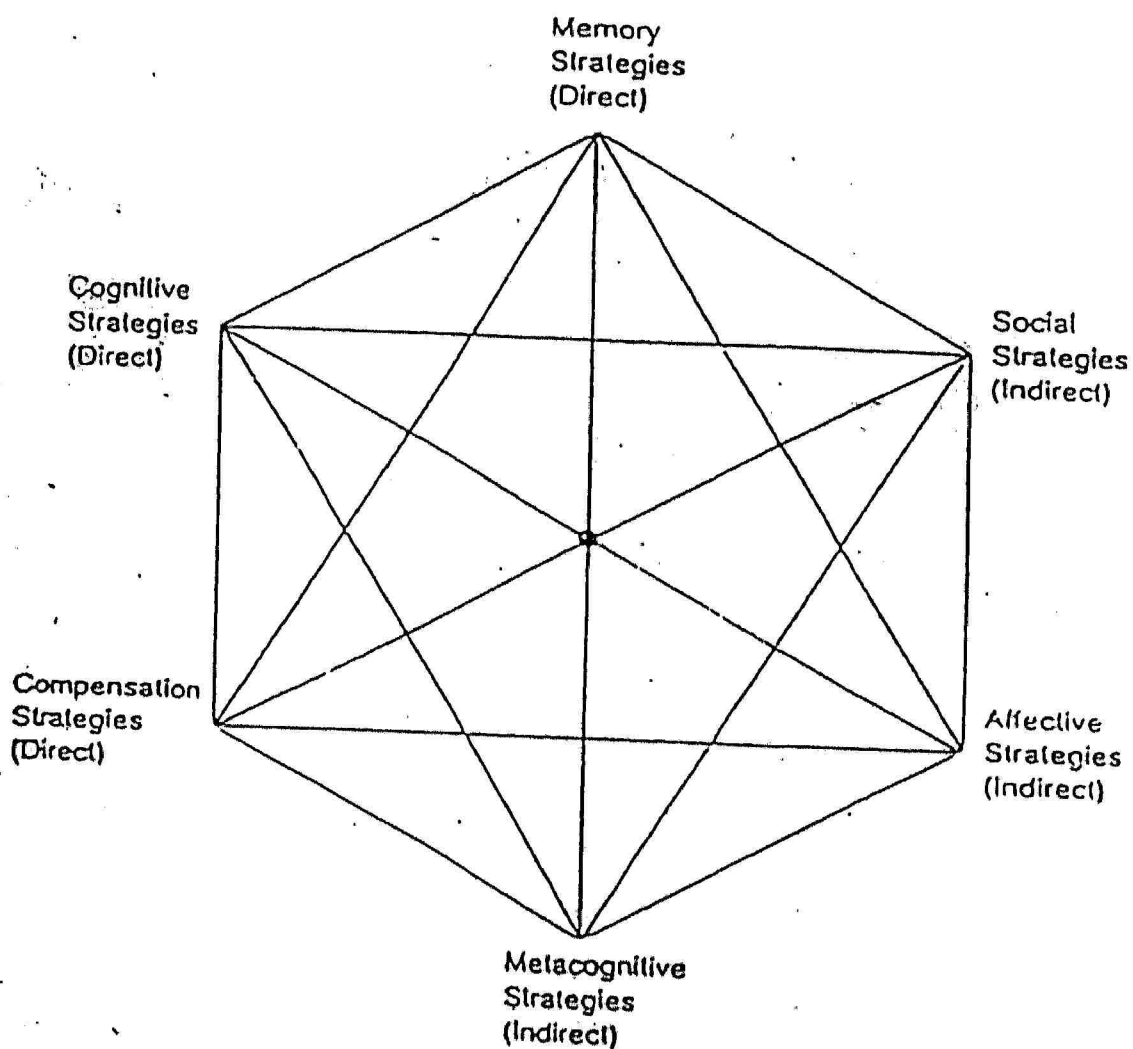
The implication from this study reveals that the use of language strategies is very important to produce a good translation. Strategy training is highly recommended for all translators and should be taught to all translators and student-translators as the use of strategies during the translation process plays a very important role in enhancing and facilitating the execution of the translation task. This fact is supported by Oxford (1990:1) who suggests that language strategies are important because they are “tools for active, self-directed involvement, which is essential for developing communicative competence”. According to Darwish (1989:2) and Houbert (1998:1), translation is “a communication process”. To communicate the message accurately from the source language into the target language, the use of appropriate language strategies result in improved proficiency and greater self-confidence. The researcher thinks that communicative competence is very essential for translators as they deal with interlingual and intercultural communication. One of the participants in this study actually expressed her belief by stating that she translated as though she was explaining the content to someone. The work of translators is to convey the message from the source language text to the target language text. To do this, they need language strategies which are oriented towards the broad goal of communicative competence. According to Oxford (1990:13):

language learning strategies are flexible; that is, they are not always found in predictable sequences or in precise patterns. There is a great deal of individuality in the way learners choose, combine and sequence strategies. Many factors affect the choice of strategies: degree of awareness, stage of learning, task requirements, teacher expectations, age, sex, nationality/ethnicity, general learning style, personality traits, motivation level, and purpose for learning the language.

The language learning strategies are divided into two major classes: direct and indirect. These two classes are subdivided into a total of six groups - memory, cognitive and compensation under the direct class; metacognitive, affective and social

Figure 7.1

Interrelationships Between Direct and Indirect Strategies and Among the Six Strategy Groups (Oxford, 1990:15)



under the indirect class. Direct strategies and indirect strategies support each other, and each strategy group is capable of connecting with and assisting every other strategy group. This is illustrated in **Figure 7.1** on **page 346**.

Training instructors in all translation institutions should train would-be translators in using the language and translation strategies as these are important translation tools in the translation process. These strategies help to solve the problems translators face while translating such as making and implementing decisions, finding the closest natural equivalent terms in the target language, dealing with long, complex source language sentences etc.

Students undergoing translation programmes should be trained to use both the direct and indirect language strategies put forward by Oxford (1990) and the translation strategies which are the additional strategies found from this study. The direct and indirect strategies support each other in many ways. These strategies such as cooperating with friends or making mental associations are generally not observable by the human eye. Once these strategies are practised by the translator trainees, there will come a time when they can use them unconsciously, that is, the usage becomes automatic or subliminal. The researcher feels that strategy assessment via think-aloud protocols, interviews, observation, note-taking, diaries and surveys, and strategy training by instructors are necessary to help learner translators become more aware of the strategies they are using and to evaluate the utility of those strategies. **Strategy training** helps guide translators to become **more conscious of strategy use** and more adept at employing appropriate strategies.

According to Oxford (1990: 12):

strategy training is most effective when students learn why and when specific strategies are important, how to use these strategies, and how to transfer them to new situations. Strategy training must also take into account learners' and teachers' attitudes toward learner self-direction, language learning, and the particular language and culture in question". As a strategy trainer, the instructor helps each student gain self-awareness of how he or she learns, as well as develops the means to maximise all learning experiences, both inside and outside the language area.

The best strategy training according to Oxford (1990:201), "not only teaches language learning strategies but also deals with feelings and beliefs about taking on more responsibility and about role change implied by the use of learning strategies". Translators should be open to this idea and should try to practise these strategies while translating. Conscious skill in the use of strategies must be taught through training. Strategy training should not be abstract and theoretical but should be highly practical and useful for translators. Research by Rubin (1975), Naiman et al. (1975), Hosenfeld et al.(1981)), CALLA project by Chamot and O'Malley (1994), self-directed learning by Gurnam Kaur (2000) etc has shown that those who have undergone strategy training generally perform better in any task than those who do not use these strategies in their work. According to Oxford (1990:213), many projects are now in action using language strategies and she has given examples of language learners who are tourists, refugees, immigrants, government workers, business people, military personnel, Peace Corps volunteers and students of all ages enrolled in primary, secondary and university language programmes. They include children, teens, adults and senior citizens. All of them have benefited from using language strategies in their learning and performing tasks.

Oxford (1990:201) emphasises two issues that should be considered by strategy instructors which are as follows:-

- a. own knowledge of the strategies
- b. attitudes about role changes.

To increase knowledge of the strategies, Oxford (1990: 202) suggests that the instructor should expand his or her own knowledge of the strategies by:

- a. reading many books on this topic
- b. attending conferences
- c. participating in in-service training activities on strategy training

Furthermore, to become a good facilitator, the instructor should have:

- a. a positive view of strategy training
- b. should conduct exciting activities in class to practise these strategies

Oxford (1990:202) suggests that strategy training can be taught in at least three different ways: awareness training, one-time strategy training and long-term strategy training. These are described below, adapted to suit a translation task and the researcher strongly recommends that strategy training be inserted as a new item in the translation syllabus.

**a. Awareness training** is also known as consciousness-raising or familiarisation training. In this situation, participants become aware of and familiar with the general idea of strategies and the way such strategies can help them accomplish various language tasks, in particular the translation task. Awareness training is very important, because it is often the individual's introduction to the concept of learning strategies. It should be fun and motivating, so that participants will be encouraged to expand their knowledge of strategies at a later time.

**b. One-time strategy training** involves learning and practising one or more strategies with actual translation tasks. This kind of training gives the learner information on the

value of the strategy, **when** it can be used, **how** to **use** it, and **how** to **evaluate** the success of the strategy. It is appropriate for translation students who have a need for particular, identifiable, and very targeted strategies that can be taught in one or just a few sessions. An example is in the teaching of certain memory strategies without integrating them into a more prolonged strategy training approach. In general, one-time training is not as valuable as long-term training.

**c. Long-term strategy training**, like one-time strategy training, involves learning and practising strategies with the actual translation task. Students learn the significance of particular strategies, when and how to use them, and how to monitor and evaluate their own performance in a translation task. Like one-time training, long-term training should be tied to the translation task and objectives of the language programme (to concentrate on the source and target languages). However, long-term training is more prolonged and covers a greater number of strategies. It is likely to be more effective than one-time training.

According to Oxford (1990: 204), **the steps in the strategy training model** (here to be used for student translators) are as follows:-

1. determine the learners' needs and the time available
2. select strategies well based on the needs of the learner
3. consider integration of strategy training as it is most helpful to do so with tasks, objectives and materials used in the training programmes
4. consider motivational issues for example, giving grades for attainment of new strategies
5. prepare materials and activities such as handbooks and exciting activities
6. conduct "completely informed training", such as, why strategies are important and how they can be used in new situations to solve problems. Transfer of strategies is possible from task to task. Research shows that strategy training which fully

informs the learner by indicating why the strategy is useful, how it can be transferred to different tasks, and how learners can evaluate the success of the strategy, is more successful than training that does not.

7. evaluate the strategy training – Learners' own comments about their strategy use are part of the training itself. These self-assessments provide practice with the strategies of self-monitoring and self-evaluating, and they offer useful data for the instructor. The instructor's own observations, during and after the training and following, are useful for evaluating the success of strategy training. Possible criteria for evaluating training are task improvement, general skill improvement, maintenance of the new strategy over time, transfer of strategy to other relevant tasks and improvement in learner attitudes.
8. revise the strategy training - As in any training effort, the evaluation will suggest possible revisions for the materials used in the training session.

This eight-step model focuses on the teaching of learning strategies themselves. The steps might not always have to be done in this order; some can be performed at the same time, or in a slightly different order. The first five are planning and preparation steps, while the last three involve conducting evaluation and revision of the training. Feedback from other people is important as it helps to get useful comments and suggestions to further improve the training materials for translators.

Besides teaching these language learning strategies, translation instructors should also include the additional translation strategies (one metacognitive and two cognitive strategies) found from this study and include them in their translation syllabus. These strategies should be taught in tandem with the language learning strategies. These additional strategies are:

- a. stating own beliefs on how to translate and implementing them
- b. finding own solutions to translation problems and carrying them out

- c. using the discrimination strategy to find the closest, matching equivalent terms in the target language from two or three alternatives identified

The Cognitive Academic Language Learning Approach (CALLA) is designed by Chamot and O'Malley and Chamot (1994) which embeds training in learning strategies within activities for developing both language skills and content area skills for students in secondary schools. Chamot and O'Malley (1994) found that students who were trained in applying language learning strategies to content subjects such as science, engineering, mathematics etc, performed much better than students who did not use these strategies. Other studies by Gurnam Kaur (2000), The Language Learning Disc: A Videodisk for Training Language Learning Strategies (USA) by Joan Rubin (1975), the CRAPEL Model of Self-Directed Language Learning (France) by Henri Holec, GRASP: An In-Service Teacher Training Project Involving Self-Direction for Teachers and Learners (England) by Anna Smith and Peter Revill etc have shown that the application of language strategies to language learning tasks has brought about an improvement in the performance of students. The researcher strongly feels that if language or translation (in the context of this study) strategies are applied during the translation process by translators, then the translation product produced by them will be better and the translation process can be faster.

#### **7.4.3 The Four Approaches to Translation**

The translation approaches advocated by Bell (1991), Sager (1994) and Darwish (1989, 1995, 1999) in their translation models, although explained differently by them, are in essence the cognitive, i.e. making and implementing decisions such as reading aloud, analysing etc, linguistic, i.e. processing the source and target texts at the syntactic, semantic and pragmatic levels, communicative, i.e. conveying the source text information in an accurate, clear and natural manner and pragmatic, i.e. ensuring that the purpose of the translation task is fulfilled and that it suits the intelligence level and

the language proficiency level of the target readers. These approaches are important to ensure an accurate and good translation product and therefore must be taught to translation students. A translator must be able to convey the original message in the source language text accurately by using the target language in a simple and natural form. The content must be communicated accurately, clearly and naturally and it must suit the intelligence level and language proficiency level of the target readers. The equivalent terms used in the target language must suit the context of the situation and the culture of the target readers of the translated text. The translators must be encouraged to use all the four approaches put forward by Sager (1994:135), which are the:

1. cognitive (comprehension-reconstruction)
2. linguistic (deverbalisation-reverbalisation)
3. communicative (decoding-encoding)
4. pragmatic (decomposition-recomposition)

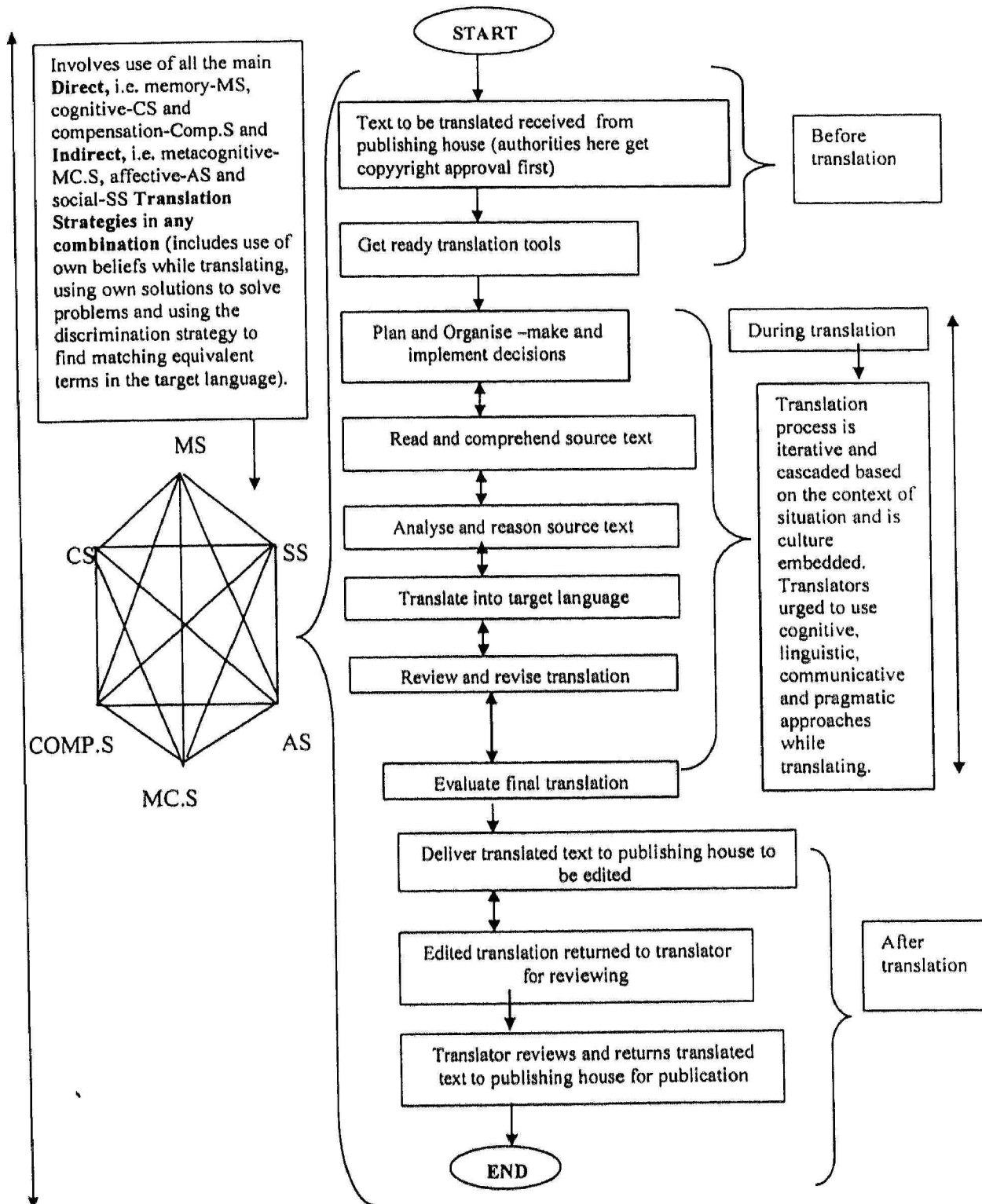
in their translation, which is, as Darwish (1989: 3) says bi-directional, between the SL text and the TL text. A translator also has to be made aware of the four levels put forward by Newmark (1988:19) which are the textual, referential, cohesive and natural while translating so that his or her translation will have an accurate, clear and natural flow in the target language. Practice must be given in the training programme to ensure that all would-be-translators know how to use these four approaches while translating.

#### **7.4.4 Researcher's Proposed Translation Model**

External processes of translation are situation-specific in as much as internal processes are unique to the individual. Through the findings obtained from the internal translation process and the external factors involved in translation, the researcher has proposed a translation model which is shown in **Figure 7.2 on page 354**.

Figure 7.2

# RESEARCHER'S PROPOSED TRANSLATION MODEL



The proposed translation model by the researcher in Figure 7.2 is divided into three phases: before, during and after the translation process and these are discussed below.

1. **Before Translation:** Here, the authorities at the publishing house apply and obtain the copyright approval for translating a chosen English language science book into the Malay language. Then the prospective translator, who is a subject specialist is chosen. A contract is signed between the publishing house and the translator. A deadline is given to the translator to complete his or her translation task. If the chosen translator feels that he or she cannot complete the translation on a part-time basis, he or she is free to divide the chapters among his or her colleagues who are also subject specialists, but he or she has to supervise their translation to ensure that there is uniformity and consistency among the terms used in the target language in the translated text. The translator gets ready his translation tools such as the bilingual and monolingual dictionaries, writing tools or computer, thesauruses, terminology lists etc.
2. **During Translation/Internal Translation Process.** In this stage, the translator plans and organises his or her translation, that is, makes and implements decisions. First the translator decides to read and comprehend the source language scientific text. Then he or she actually reads the text and summarises it. Next, he or she analyses the difficult keywords and phrases, paraphrases them and tries to find the closest natural equivalent terms from two or three alternatives identified in the target language which best suit the context of the situation of the scientific text and the culture of the target readers. Then he or she translates the source language scientific text sentence by sentence into the target language. Monitoring is also done after completing the translation of each sentence. Revision is done if deemed necessary. Then the translator evaluates his or her whole performance of the whole completed translated version against

the original scientific text in the source language. Then he or she gives his or her colleagues to read the translated version for reviewing purposes and makes the necessary changes if necessary.

3. **After Translation.** Here the proofread translated text is submitted to the publication house for editing. Once the editors at the publication house have edited the translated text, it is returned to the translator who reads it again to ensure that the content has not been distorted or made ambiguous. Once the translator is satisfied with the translated text, it is returned to the publication house for publishing. If there are some grievances regarding the editing performed by the editors at the publishing house, then the grievances are discussed by both parties. Once both parties have harmonised their differences in opinions regarding the revision, the translated text in the target language is published and then marketed.

From the translation model depicted by the researcher in Figure 7.2, it is seen that the translator starts the internal translation process by planning and organising, that is making decisions and implementing them, which are used for every level of the translation process, that is, in reading and comprehension, analysing and reasoning/comprehension of the source text information, translating, monitoring and evaluating his or her performance. The translator then reads and understands the source language text and summarises its content using the translation strategies, his or her visual sensory perception which involves active reading, comprehension and production. This is followed by the next level or stage: analysis and reasoning of the difficult keywords, phrases and expressions in the source language scientific text. Here, the translator uses the discrimination strategy to choose the closest matching equivalent term from two or three alternatives identified in the target language. The translator does this by using the direct and indirect translation strategies as shown in **Table 6.10 on**

page 311 in Chapter Six. These translation strategies are actually all the principal direct and indirect language learning strategies put forward by Oxford (1990) and the additional strategies found from this study via the analysis of the five TAPs. The next level or stage is the actual translation process whereby the translator uses the translation strategies, especially the cognitive strategies, to find the closest, natural matching equivalent terms for the source language keywords first in the target language and then only does he or she translates the whole sentence. Once the translator has completed translating a sentence, he or she reviews it against the original source language sentence to ensure that the meaning is conveyed clearly, accurately and naturally in the target language. If he or she is not satisfied, then it is revised. The process is repeated for every single sentence. The translation strategies are applied at every level – reading and comprehension, analysing and reasoning of the information in the text, translating, monitoring and revising and finally evaluating the whole production or performance. This brings the translator to the end of the internal translation process, when he or she completes the whole translation task.

The researcher also agrees with Sager (1994:135) that at the reading comprehension stage the translator has to look-up the meanings of words, find the closest natural equivalents for them in the target language based on the discrimination strategy to suit the context of the situation and the culture of the target readers and then finally produce the translated text in the target language. He or she has to make decisions on how to solve his or her problems in translation such as contacting friends for clarification, contacting DBP, for terminology – whether to use loan translation, literal translation or word-to-word translation. Translators must also use all the four approaches (see page 353) put forward by Sager (1994: 135) in their translation which is also as Darwish (1989: 3) says bi-directional between the SL text and the TL text. A translator also has to be aware of the four levels put forward by Newmark (1988:19)

which are the textual, referential, cohesive and natural while translating so that his translation will have an accurate, clear and natural flow in the target language. The main steps of comprehending the source language text and then translating into the target language text, (using all the direct and indirect translation strategies) keeping in mind the usage of accurate and consistent terms are important. The researcher also agrees with Darwish (1999:7) and Rose (1981:1-8) on the steps that the translators take in their process of translation. The major iterative activities are planning, analysing the information in the SL text, translating, revising, editing, proofreading, reviewing, completing the translation and delivering the translation.

The longer two-headed arrow on the left shows that the translation strategies, comprising the main direct and indirect language strategies and the three translation strategies found from this study (see page 336) are used from the start to the end of the translation process. The six-sided diagram shows that the translation strategies are flexible and can be used in any combination, for example metacognitive with social, social with compensation, cognitive with affective etc.

The shorter two-headed arrow on the right in Figure 7.2 of the proposed translation model shows that the internal translation process is iterative, cumulative and integrative. It also shows that while translating the translators use all the four approaches: cognitive, linguistic, communicative and pragmatic to ensure that the final translated version suits the culture, intelligence, context of situation and language proficiency level of the target readers of the translated version. In other words, the researcher suggests that the *skopos* or purpose of the translation must be emphasised. Furthermore, the translation process is iterative and cascaded, that is, it involves forward and backward-looking activities. In addition, translators often review and revise their work while translating. A final evaluation is done upon completing the whole translation task.

This proposed translation model by the researcher is derived from the findings from this study. It is open to further research by future researchers in the field of translation who can experiment it with other kinds of texts or text-types and with other pairs of languages in the world.

#### **7.4.5 Characteristics of a Good Translator**

From the findings of this study, it was discovered that for a translator to translate scientific texts from English to Malay, he or she must first of all be a subject specialist so that the content of the original text is communicated accurately and clearly while translating. If the translator is a Chemistry expert, then he or she should just translate Chemistry texts and not the other sciences as this will ensure that the quality of the translation is upheld and the text is translated fast.

The second most important characteristic that the translator must have is that he or she must be very proficient in both the source and target languages. The source language must be mastered very thoroughly so that the meaning conveyed by the source text author is very clearly and accurately understood by the translator and it must never be misconstrued. Every aspect of it must be clearly interpreted by the translator. The target language must be mastered even more thoroughly because the translation is delivered in the target language. A translated text can be deemed weak if it is delivered in the target language very badly as the translator is not aware of the grammar and nuances of the language. Thus, it is best if the target language is the best known language of the translator, usually the translator's native language because only such highly proficient language users will have the intuitiveness for the language and will thus be able to deliver a better translation.

According to Aiono Muhammad (1979:12), an author on translation, a good translator must be a subject specialist, be good in the source language, be even better at the target language and he or she must have obtained training in the theories and

practice of translation. The researcher would like to add that if a translator wishes to translate scientific texts, then he or she must get science training too. About 84% of the translators in this study were Malays and they did express the fact that it is an advantage for them to be able to translate into their own mother tongue because they know how the language ought to be written and how it should sound.

A third characteristic which the researcher feels that all translators must have is a knowledge of all the basic principles of the theories and practice in translation. A translator's job is not only to find equivalent terms in the target language with the help of terminology lists and a bi-lingual dictionary but he or she must be able to deliver the translation according to the rules, style and grammar of the target language so that the translation does not sound awkward and unnatural. The translated version must be delivered in a manner that sounds natural and smooth-flowing and is meaningful to the target readers.

The researcher suggests that a fourth characteristic of a good translator is that he or she must have feelings of empathy for his target readers. He or she must ensure that the translated product must be suitable to the intelligence and language proficiency levels of the target readers. A text translated for primary school students must cater to their intelligence and language proficiency level, and a text translated for university students must be suited to their level of comprehension. Once the translated text in the target language fulfils these criteria, the target readers will find it easy to follow the concepts, processes and other ideas explained in the translated text and these kind of student-friendly translated books might be bought by the students. In other words, all translators must know the *skopos* or purpose of their translation task.

Finally, the researcher feels that a translator must be committed and disciplined. The translation task commissioned to him or her must be completed by the deadline

given. The researcher strongly recommends that the characteristics of a good translator be included in the translation syllabus.

#### **7.4.6 Division of Work**

If the science book to be translated is thick, the researcher feels that it would be wise to divide the workload of translating among three or four experienced translators instead of doing it on one's own as this will take up a lot of time and by the time it is published it would be outdated.

#### **7.4.7 Getting Retired Professional Staff to Translate**

The researcher feels that it would be a good idea to employ the service of retired professional staff who can translate on a full-time basis as this will speed up the process of translation of English language scientific texts into the Malay language.

#### **7.4.8 Training in Translation**

The researcher suggests that translation institutes in Malaysia such as ITNMB and DBP which conduct translation courses must ensure that all the theories of translation and the translation process are taught. Trainees must be given a lot of practice in translation. They must be made aware of the tools of translation: the resources for getting help such as the bilingual dictionary, thesaurus, terminology lists, consultation with colleagues, DBP Hotline, translation strategies etc. In teaching the process of translation, the translators must be made aware that underlying the translation process is a configuration of strategies (Darwish, 1989:2). They must be taught to use the proposed Direct and Indirect Translation Strategies as put forward by the researcher to help them in solving their problems and in making decisions in their translation process. The translators must be given training in translation strategies so that they become more conscious of strategy use and more adept at employing appropriate strategies. This is to help each translator gain self-awareness of how he or she translates. They must also be taught to process the information using the cognitive, linguistic, communicative and

pragmatic approaches as put forward by Sager (1994:135). They must also be taught to work at the textual, referential, cohesive, and natural levels as stipulated by Newmark ((1988:20). Trainees must be made aware that translation is a bi-directional process between the source and target languages and that it is a complex dichotomous and cumulative process which involves a host of activities drawing upon other disciplines related to language, writing, linguistics and culture (Darwish 1989:1). It is a backward and forward looking process which entails production monitoring, revision and checking of the translation product. All the steps in the translation process as stated in the findings from this study and which comply in general to what the translation authorities such as Rose, Bell, Sager and Darwish state have to be followed to attain efficiency in the translation task. If all these basic points are taught and practised, then the translation product will be good and it will serve its purpose to the target readers of the translated version who will be able to comprehend the content easily. If the editors find the translation product good, it is then published and the translator is given further contracts to translate.

Furthermore, the researcher proposes that ITNMB and DBP which provide training for translators be equipped with the latest software such as a spelling check, terminology lists, examples of good translations which can be used by the translators as comparisons against their own translation or as samples for their on-going translation tasks. These accreditation boards must also have a hotline whereby translators can call them if they need help where terminology is concerned. All these facilities should be made accessible to all the translators in Malaysia.

#### **7.4.9 Getting Copyright Approval**

Translation in Malaysia is slow because the publishers need to get copyright approval from the writer and publisher of the original book. They are given about two years to complete the translation and when the translation does not meet this deadline,

then the publishers have to get copyright approval again. Furthermore, translators hand in their work bit by bit and editing takes time and thus when the translated book reaches the market, it is outdated as a new edition of the English language version has arrived.

The researcher feels that publishing houses should follow the examples set by Japan and Korea where the copyright approval for translating a book is obtained as soon as the original book is published, instead of asking for copyright approval after the book has been in the market for three or four years. In this way, they can ensure that the translated books are not outdated.

#### **7.4.10 Overcoming Terminology Problems in Translation**

The researcher suggests that translators should not be afraid of terminology. They should be brave to solve the terminology problems by either paraphrasing, using techniques of overcoming the problem and also be daring enough to create their own terminology if it cannot be found in the terminology lists prepared by DBP. They have to make decisions on what translation techniques to use to solve their problems while translating. These translation techniques might include concretisation or differentiation (for example the word "sibling" can be translated as *adik-beradik* in the Malay language), logical derivation (using cause and effect principles), antonymic translation (using opposites to clarify a concept) and compensation, which is used when something in the source language is not translatable (Shveitser, 1973:2-28 cited in Fawcett, 1997:28-31). They may also use other translation techniques such as borrowing (the source language form is taken into the target language, usually because the latter has a gap in its lexicon, for example, "generation" is translated as *generasi*), calque (is a literal translation at the level of the phrase), transposition (used in dealing with grammatical changes in translation), modulation (a variation in the message, obtained by changing point of view, lighting), equivalence (an equivalent translation of an idiom based on the culture of the target language) and adaptation (this kind of substitution is

supposed to take place when the receiving culture has little or nothing in its experience that would allow it to understand a close translation for example Nida's example of the absurdity of translating *white as snow* for a culture which has no knowledge of the substance) (Vinay and Darbelnet, 1958 in Fawcett, 1997:34-39). The translators can use these techniques in solving terminology problems faced in producing their translation in the target language.

Other writers such as Ainon Muhammad, Abdullah Hassan and Asmah Haji Omar have written on ways to overcome the terminology problem in translating English language scientific texts into the Malay language. The following books will be useful for translators of English language scientific texts into the Malay language.

- Asmah Haji Omar. 1979. *Aspek Penterjemahan dan Interpretasi*. Kuala Lumpur: Universiti Malaya Publishers
- Ainon Muhammad. 1994. *Panduan Menterjemah*. Kuala Lumpur: DBP.
- Asmah Haji Omar. 2000. *Advanced Learner's English-Malay Dictionary*. Selangor: Fajar Bakti Sdn. Bhd.

Asmah Haji Omar (2000) has completed translating Hornby's (1989) *Advanced English-Malay Dictionary* of 2221 pages and the researcher feels that it will be of great help to all the translators in Malaysia.

The problem of affixes, words in a series, numerical classifiers, expressing scientific ideas in the Malay language, idiomatic language, proverbs, translating cultural elements, creating new terminology and opposite concepts are all dealt with by Ainon Muhammad and Abdullah Hassan (in Asmah 1979) in the books mentioned above.

According to Robinson (1997:146):

- one of the most important aspects of the translator's job is the management of terminology: being exposed to it, evaluating its correctness or appropriateness in specific contexts, storing and retrieving it. The focal nature of terminology for translation has made terminology studies one of the key subdisciplines within the broader field of translation studies; learning specialised terminology is one of the main emphasis in any course on legal, medical, commercial, or other technical translation.

Classes in specialised terminology, using dictionaries and other reference materials and theoretical work on terminology management are useful for translators. Experiencing things while working and reading makes one more knowledgeable in the use of terminology. According to Robinson (1997:146), "it is far easier to learn and remember specialised terminology...if one thinks of it as simply the way working people talk and write, rather than trying to memorise long lists of words taken out of context". He expresses his ideas on how a translator can explore terminology by using a web or mind-map as shown in **Figure 7.3 on page 366**.

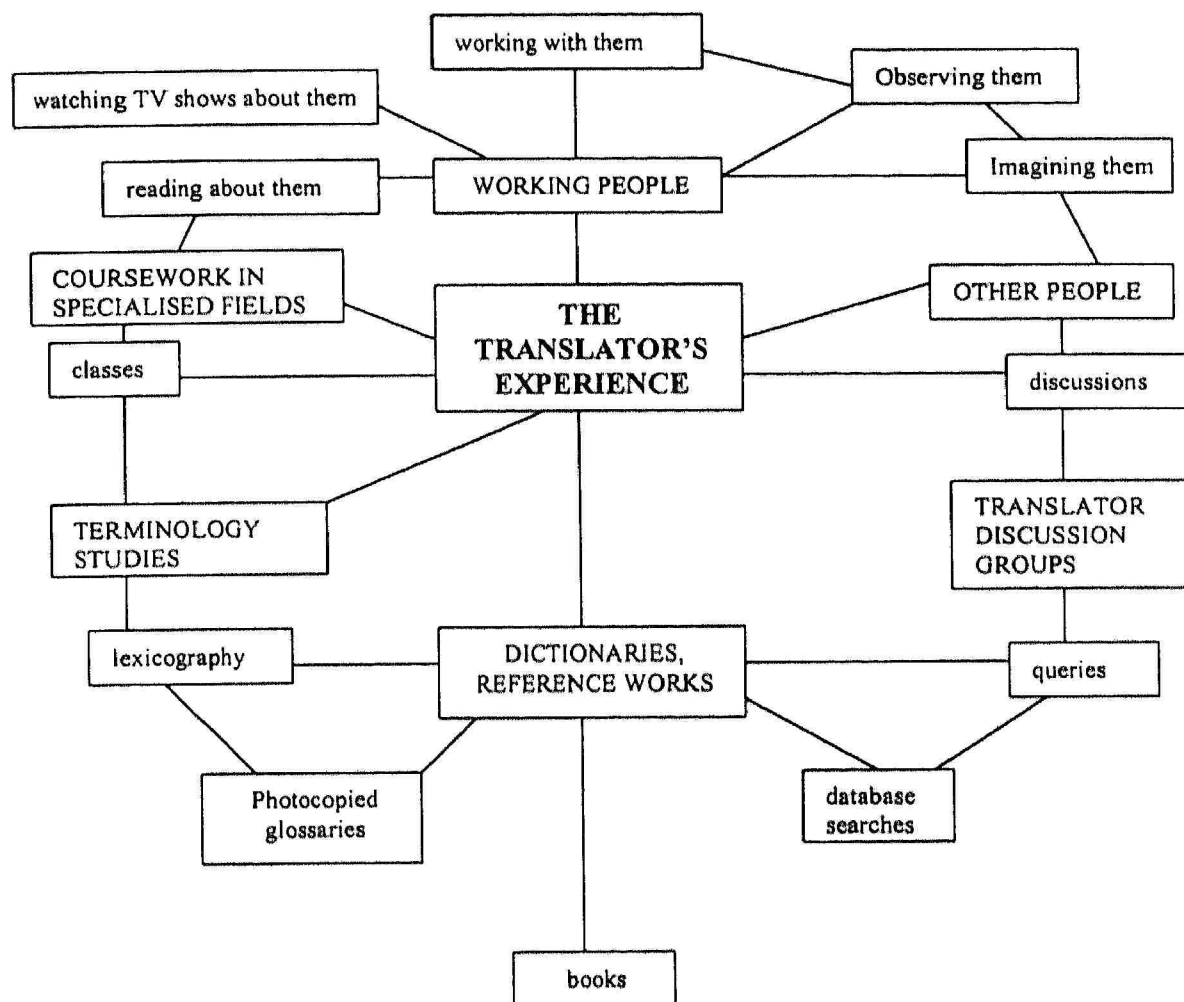
## **7.5 Conclusion**

In conclusion, the researcher feels that to ensure faster and better translation of scientific texts from English to Malay for Institutions of Higher Learning in Malaysia, translators, instructors in translation training institutions and publishers should be encouraged to practise the recommendations that have been put forward by the researcher which are based on the findings from this study.

As teachers of translation programmes, we should be 'ideas' people and 'rationale' people (Allwright, 1981). We should always keep an open mind to new ideas and techniques. We should be confident enough to try out these new methods and where possible to adapt them to our Malaysian culture and environment. For example, **strategy training in the direct and indirect translation strategies** (derived from the direct and indirect language strategies taxonomy by Oxford (1990) and additional strategies found from transcriptions of TAPs in this study) must be **included in the translation syllabus** and these must be taught well. Besides this, trainee translators must be given ample practice in applying these strategies while translating until the application of these strategies becomes automatic to them. In addition to this, the **four approaches** to translation, which are the cognitive, linguistic, communicative and

Figure 7.3

**The Translator's Experience of Terminology (Robinson, 1997:158)**



pragmatic should be made explicit and included in all translation training programmes. Teachers must also know the rationale (be able to justify their opinions and advise their students) for introducing these new activities into the translation programme so that students will be able to obtain answers when questions are raised. Material designers in the translation field should come up with more up-dated teaching and learning materials. In this way trainee translators can benefit from these materials and master the translation strategies and approaches to the translation process better. In this way they can learn to manage their translation task and finally produce better translation products. Besides these, the qualities of a good translator as suggested in **section 7.4.5 on page 359** such as having self-discipline, being good at both the source and target languages, being a subject specialist in his or her area and being able to keep himself or herself up-dated with the latest knowledge in his or her field of expertise, etc must also be highlighted while teaching so that these good habits are made known to trainee translators early.

From the findings of this study via TAPs, interview and a questionnaire, a translation strategies taxonomy and a translation model have been proposed by the researcher. These can be experimented by future researchers in the field of translation using other pairs of languages in the world. Future researchers can further add to these findings.

The researcher's own translation model is based on the principles put forward in the models by Oxford (1990), Bell (1991), Sager (1994) Darwish (1989,1995 and 1999) and from the findings from this study. It is recommended by the researcher that the **translation model in Figure 7.2 on page 354** be used in translation training programmes as it is comprehensive, practical, easy to follow and useful for all translators and would-be translators. It can be tried with other pairs of languages in this world. The major findings from this study have been included in this translation model.

The key elements are the steps in the translation process, the four approaches to translation and the use of the translation strategies in any combination from the start to the end of the translation process. This model should be explained and discussed with all translator trainees. It should be emphasised that translation is a communicative, problem-solving learning process and the translator is a learner and a communicator of information. A translator's duty is to communicate the message in the source text into the target text accurately, clearly and naturally.

The problems faced by the participants during their translation process were ranked. It was found that all of them put **terminology** as their **greatest problem** followed by the style and concord of scientific writing. This was **found to be true from the responses to the questionnaire, interviews and the analysis of the TAPs**. As such, translators should read books which tell them how to overcome terminology problems. Abdullah Hassan, Ainon Muhammad, Asmah Haji Omar and Robinson have written on this aspect and details of this are stated in the section on recommendations. They should also keep in mind the web or mind map on how to expand their terminology as put forward by Robinson (1997:158). The problem of terminology and how to go about solving it should also be included in all translation syllabuses. DBP officers should have brainstorming sessions with academic subject specialists from Institutions of Higher Learning and come up with more terminology lists and they should also keep on **up-dating** their previous **terminology lists**. Teachers can also put into practice in their teaching lessons on translation all the points on how to go about dealing with terminology as put forward by Ainon Muhammad (1994) and Robinson (1997) in their books on translation.

This study also explored the reasons for the slow process of translating scientific texts from English to Malay in Malaysia. Five research questions were answered which investigated the current situation of translation of scientific texts from English to Malay

in Malaysia and the internal translation process. The reasons for the slow translation process are due to part-time commitment, no recognition being given for translation, the high cost incurred in publishing translated books and poor market value. Recommendations for overcoming such problems have been suggested.

The researcher also agrees with Wilss (1999: 225) "that the modern information and communication technologies will have far-reaching consequences for the work of translators". With the development in computers and the information data highways, we have access to all kinds of information anywhere, anytime and at ultra-high speed and thus translators must be up-dated in the latest technology to get access to these. The training of translators must also respond to these developments in technology. Even though this study did not touch on machine translation, this aspect is something which will become a reality in Malaysia one day in the translation of scientific texts from English or other languages into Malay. In a wide-ranging study published in his book *Language Engineering and Translation: Consequences of Automation*, Sager (1994:v) points out:

This book ... seeks to bring together many traditional and several new ideas I consider necessary for the training of language engineers and mediators in courses which must combine computational linguistics and modern languages. My main purpose in writing this book stems from the dual recognition that **potential translators need to be aware of the technology available and likely to develop in future to support translation**; and that potential language engineers and designers of machine translation systems need to acquire an **understanding** of what is involved in certain types of human translation.

Thus teachers should not shy away from the computer and other technologies available in the market which will become increasingly necessary for the survival of the translation profession, and this has to be inculcated into translation syllabuses in Malaysia.

Finally, I agree with the Malaysian Prime Minister's statement that science and technology be taught in English language in all Institutions of Higher Learning as

presently the materials and books on science and technology that have been translated into the Malay language are insufficient to cope with the daily explosion in knowledge in these two fields. Some translations are ambiguous and annoy teachers and students who do not seem to understand the poorly translated science texts in the Malay language. Generally the translated science textbooks in the Malay language are usually out-dated due to the time taken to translate and publish them. In our government's aim to achieve Vision 2020 to see Malaysia a developed and industrialised country, we must not be left behind in the fields of science and technology, and this can only be done if both these fields are taught and learnt in the English language in Malaysia.

The government's statement to allow science and technology to be taught and learnt in the English language in all Institutions of Higher Learning in Malaysia has delivered a heavy blow to the translation industry because translation of English language scientific texts into the Malay language has further deteriorated as students and lecturers in Institutions of Higher Learning have the freedom to cope with this explosion of knowledge in science and technology in the English language. Both ITNMB and DBP see no benefit or profit in asking translators to translate English language scientific texts into the Malay language as these textbooks and materials do not sell and they have to stockpile them and later give them as free copies or sell them at discount prices. Even the printing presses at the local universities have nearly stopped publishing translated books due to the heavy cost incurred in publishing these books. ITNMB is geared towards providing its services to private organisations where they can make profits while DBP is more to training translators and publishing books written in the Malay language.

Another blow to the translation of Science and Mathematics textbooks from English to Malay has come with the announcement of the decision of the government in July 2002 by the Malaysian Minister of Education, Tan Sri Musa Mohamad, as reported

on page one in the *New Sunday Times* dated 10<sup>th</sup> November 2002 that effective 2003, English will be used to teach Mathematics and Science to students in Standard One, Form One and Lower Six. To promote the usage of English in these subjects, the incentives proposed include a triple increment for teachers who master English; promoting teacher trainers in Science, Mathematics and English under the Malaysian Trainers' Development Programme from the DG3 graduate scale to DG2; and a special allowance to Science, Mathematics and English teachers posted to rural schools (*New Sunday Times*, November 20, 2002). In the *New Sunday Times*, 17 November, 2002 it was reported that on 20<sup>th</sup> November 2002, a two-week intensive courseware course was held in Seremban to give training to 800 "master trainers" who will guide other teachers in teaching Science and Mathematics in English effective 2003. Textbooks for the two subjects in English are being printed and the Education ministry does not anticipate any shortage of such textbooks when schools re-open next year (*New Sunday Times*, 17 November, 2002: 4).

In the *New Sunday Times-Learning Curve* (17 November, 2002:1), it was reported that David Graddol, a linguist and author who was the first keynote speaker at an international conference held in late September 2002 "*English Language and Development for Equity in the 21<sup>st</sup> Century*" organised by the International Languages Teacher Training Institute, in his paper presentation which was themed "English Language as the Lingua Franca of the 21<sup>st</sup> Century" said that the English language is so vital that he calls it a "basic survival skill", spoken in so many countries today that one would tire of naming them. He said that "there is absolutely no doubt" that English is the dominant language in science and technology and "is the reason why it will continue into the foreseeable future". Graddol stresses the need for "high-proficiency in all the specialist registers of English". The issue that arises in this context is, "how good is someone in writing academic English"? This he says, is a "big problem now right

around the world because all the academic and scientific journals are moving towards publishing in English only". Graddol is a lecturer with The Open University's (UK) school of education and has published widely, notably "The Future of English"? commissioned by the British Council. In this publication, he states that since World War II, scientific journals in many countries have shifted from publishing in their national languages to publishing in English. At the same conference, Professor Loga Mahesan Baskaran, a University of Malaya professor of linguistics in her paper entitled "Whose English? Whose Standard? The Role of English in Malaysia", has a remedy for falling English language standards plaguing the country, which is a compulsory pass for the paper in the Sijil Pelajaran Malaysia examination. She believes that such a move would bring about the necessary change of mindset towards English. She feels that the introduction of English in Science and Mathematics points to the mindset that "English is also Malaysian" (*New Sunday Times – Learning Curve*, 17 November 2002: 2).

Our country, Malaysia, is still very slow in the process of translating books and materials in science and technology into the Malay language for institutions of higher learning. Steps must be taken to give more incentives to translators in these fields to lure them into the business of translation. Recognition at professional, governmental and societal levels must be given to all translators. Progress must also take place in all the processes from translating to editing to publishing. In this way, we can cope with the knowledge explosion in these two fields. Presently, we are definitely not ready. However, the spirit of translating English language scientific texts into the Malay language must be upheld and encouraged and must be made into a **National Agenda**. More moral support in the form of better remuneration and acknowledgement of services for the work of translation must be given to all the translators from both the public and private sectors in Malaysia. There are always some of our citizens who cannot cope with English language in Malaysia, and in an effort to keep them abreast of

what is new in the fields of science and technology, the spirit of translation must be kept alive. We must proceed slowly but we must **never put a stop** to the translation of English language scientific texts into the Malay language as there are people who need these materials to keep abreast with the rest of the world slowly.

#### **7.6 Suggestions for Further Research**

For further research in the field of translation, the following topics are suggested:

1. An in-depth study of a think-aloud protocol (TAP) of an English language scientific and literary text into the Malay language. Here the researcher can study the differences in thinking when it comes to different texts and also study the advantages and disadvantages of TAP as a method of research. It would be better if the sessions are video-taped so that the time factor and other affective strategies can be investigated in depth. The problems encountered in translating both these texts can be found and a comparative study can then be made.
2. A study of the translation product – A case study of the translation of an English language Scientific text into the Malay language. Here the language structures of English and Malay can be investigated. The translated text can then be assessed against the criteria of a good translation and a study done on the deviations and shortcomings of the translated version. From this, the researcher can then give recommendations on how to overcome the problems.