

APPENDIX A

ITNMB – MALAYSIAN NATIONAL INSTITUTE OF TRANSLATION

1. Address

From September 1993 to March 1998, ITNMB's address was as follows:

Tingkat 3, Menara Pengkalen Lorong Ceylon, Jalan Raja Chulan, 50200 Kuala Lumpur.

From April 1998 until now, its address is as follows:

Wisma ITNM, No.2, Jalan 2/27E, Seksyen 10, Wangsa Maju, 53300 Kuala Lumpur.

2. Background

As a limited company, its share capital is fully owned by the Malaysian Government under the Minister of Finance (Incorporated). Nevertheless, in terms of administration, ITNMB is supervised by the Ministry of Education. In line with the Companies Act 1965, its objectives, jurisdiction, board members and matters pertaining to the function of ITNMB are governed by its Memorandum and Articles of Association approved by the Registra of Companies.

3. Board of Directors of ITNMB

ITNMB is governed by the board of Directors consisting of seven members who are as follows:

Chairman

Yang Berbahagia Dato' Abdul Aziz Abdul Rahman

Vice Chairman

Yang Berbahagia Dato' Dr. Abdul Rahman bin Idris

Other Members:

1. Encik Basiron bin Jumin
2. Yang Berbahagia Dato' Mohd. Salleh bin Abdul Majid
3. Yang Berbahagia Dato' A. Aziz bin Deraman
4. Yang Berbahagia Dato' Haji Baharuddin bin Zainal

5. Yang Berbahagia Dato' Dr. Mohd. Mansor bin Hj. Salleh
6. Puan Hajjah Hamidah binti Baba

4. Managing Directors of ITNMB

The following have been the managing directors of ITNMB since its establishment until now:

1. Dr. Ahmad Zaki bin A. Bakar from 1 July 1993 to 30 June 1996
2. Datuk Mahpor bin Baba from 1 July 1996 to 31 August 1999
3. Encik Amdun bin Husain from 1 September 1999 to 31 August 2001
4. Tuan Syed Ramli bin Syed Shaari from 1 September 2001 to 15 January 2002
5. Puan Hajjah Hamidah binti Baba from 16 January 2002 until now

5. Services Provided by ITNMB

The services of ITNMB are discussed below.

A. ITNMB is an official Translation Body that provides translation, interpretation and voice-over services. These multilingual services are available in Malay, English, Mandarin, Tamil, French, Arabic, Japanese, Korean and Latin.

ITNMB offers the following range of services:

1. Translation Services. These include the translation of books, manuals, reports, certificates and others in all languages.
2. Interpretation Services. These include interpretation services for conferences, seminars, overseas visits and others.
3. Translation Services for Audio-Visual Materials. These include translation services for video, cassettes, films, web sites and others.
4. Supporting Services. These include services for languages, interpretation and translation courses, editing, voice-overs, typesetting and printing.

ITNMB has a pool of expert translators. It believes human expertise should be complemented by state-of-the-art technology. As such, the latest translation tools are

being utilised to ensure the work commissioned to them will be carried out swiftly and effectively.

B. Translation Product Development Project

Under the Translation Product Development Project, ITNMB is developing:-

1. computer software such as spelling checkers, pocket translators, pocket/ordinary dictionaries, terminology lists in various languages
2. multi-lingual computer translating systems

ITNMB also organises translation, film subtitling and transfer of technology courses. The typesetting, designing, publishing and printing of translated books are managed by ITNMB. It also encourages organisations in Malaysia to sponsor such publication projects which will contribute towards the expansion of knowledge and information treasure in Malaysia. The government gives tax exemption to the sponsorship of such projects.

C. Courses Offered by ITNMB

The courses that are offered by ITNMB are:-

- (i) Diploma in General Translation (Intensive)
- (ii) Diploma in General Translation (Part-time)
- (iii) Workshop in the theories of translation
- (iv) Translation practice and editing
- (v) Language workshop for translators
- (vi) Workshop in translation practice and editing
- (vii) Course in the translation of subtitles and texts on Social Science – Practical.
- (viii) Translation of texts on Law – Practical

The synopsis for each of the courses above can be obtained via brochures which are given for free by ITNMB staff. A certificate is given to every participant at the end of the translation course.

(ITNMB Brochure: 1995)

6. New Business Strategies of ITNMB

The new business strategies of ITNMB include the following:

1. Malaysian Clearing House for Royalty
2. Accreditation for translators and interpreters
3. New relationship with ITNM-DBP-PPM, universities, international companies and publishers from other countries
4. New image with new strategies for the betterment of the translation industry in Malaysia

7. Products and Services Provided by ITNMB

As a one-stop translation agency, ITNMB provides:

1. translation, interpretation and voice-over services
2. publishing and printing services
3. multi-lingual translation services in French, Mandarin, Japanese, Arabic, Korean and other languages

Materials translated include books, technical manuals, agreements, financial reports, trade descriptions, prospectus and audio-visual materials.

APPENDIX B

DBP - DEWAN BAHASA DAN PUSTAKA

(INSTITUTE OF LANGUAGE AND LITERATURE MALAYSIA)

(taken from CITRA DBP, 2002: 11-13)

1. Introduction

As published in the yearly report of DBP or *Laporan Tahunan* 2000 book, the Institute of Language and Literature Malaysia or *Dewan Bahasa dan Pustaka* (DBP) was first established in Bukit Timbalan, Johor Bahru on the 22nd of June 1956 with the aim of disseminating the Malay language as the national and official language of the soon-to-be independent Malaya. DBP was transferred to Jalan Wisma Putra, Kuala Lumpur in 1957 in order to facilitate its function in making the Malay language the sole national language ten years after Malaya's independence. In 1959, through a Parliament Act, DBP changed its status as a government body to a corporate body. DBP was given full autonomy to formulate its own specific rules, organize its own programmes for the development and dissemination of language and literature according to the intelligence of the management and to carry out the activities of publishing and marketing of books more competitively according to the principles and practice of industrialization and publishing profession. Its main aim is to build and disseminate the national language in accordance with the country's policies and wishes of its citizens (*Laporan Tahunan* 2000).

2. DBP's New Headquarters

In 2002, a new DBP Headquarters building has been completed next to the old building. This new building consists of three main blocks; the Tower Block, the Podium Block and the Auditorium Block. The Tower Block which is 33 storeys high houses the office space and a 3-storey underground parking which can accommodate 557 cars. The Podium Block consists of 5 storeys which house among others the

Seminar Hall, the Multipurpose Hall, the Writers' Gallery, the Malay Documentation Centre and a canteen. The Auditorium Block can accommodate 530 people and is designed to showcase theater productions and linguistic, literary and cultural activities in the country (taken from Citra DBP 2002: 3).

3. DBP's Logo (taken from CITRA DBP 2002: x)

The logo of DBP comprises four elements: the palmyra palm frond set in the centre symbolises the writing material of old while the bracken or large fern leaf represents the instrument used to write on it; the book and the nib at the base of the palmyra leaf symbolises the publishing and writing activities of more recent time. These four elements symbolise the responsibilities of DBP as a body that develops the Malay language, literature and knowledge through writing and publishing.

The logo drawn in 1957 by Encik Hoessien Enas, was inspired by the late YB Tan Sri Syed Nasir Ismail (former Director of DBP) and Tuan Haji Abdul Samad Ahmad (former Editor of DBP).

4. The DBP's Mural (taken from CITRA DBP 2002: x)

The mural on the facade of DBPs Balai Budaya Tun Syed Nasir (the Cultural Hall) symbolises the unity of the Malaysian people who espouse the sentiment "Language is the Soul of the Nation" (the motto written on DBP's logo amidst the development of culture, education, economy science and technology in the country, expressed through one national language which is also the country's sole official language).

The mural was composed by Ismail Mustam, an artist who was once a staff of DBP. It won the mural contest organised by DBP in 1961.

5. DBP's Mission

The **mission** of DBP is to develop Malay into a language of knowledge in the process of building a Nation State.

6. DBP's Motto

The **motto** of DBP is "Language is the Soul of the Nation".

7. Objectives of DBP

The objectives of DBP (Citra 2002:11-13) are to:

1. develop and enrich the national language in all fields including science and technology
2. promote literary talents especially in the national language
3. print or publish or assist in the printing or publication of books, magazines, pamphlets and other forms of literature in the national language as well as in other languages
4. standardize the spelling and pronunciation, and to coin appropriate terminologies in the national language.
5. encourage the correct use of the national language.
6. encourage the extensive use of the national language for all purposes, in accordance with the existing laws.

8. DBP's Clients' Charter

DBP is committed to producing authoritative and quality books and other publications in standard Malay to be promoted through competent, prompt and excellent service. By giving priority to the needs of the users of the Malay language, the authorities at DBP pledge the following productions and services:

1. a Malay language lexicon and corpus database for research and usage
2. guidelines on spelling, pronunciation and grammar which are up-to-date and a language register which is definitive
3. dictionaries and encyclopedias which are comprehensive and up-to-date
4. terminologies that are precise, suitable, and concordant with the various fields of knowledge
5. friendly and competent advisory services on the use of language and on literary development
6. literary works of quality
7. infrastructure and atmosphere that are dynamic and conducive to the production of literary works
8. quality books and periodicals in the various fields of knowledge
9. **Organisation of DBP**

9.1 Chairmans of the DBP Board of Control (taken from CITRA DBP 2002: 8)

The following persons have been the chairmans of the DBP Board of Control since its establishment until now:

1. Yang Berbahagia Tan Sri Datuk Sheikh Ahmad bin Mohd. Hashim from 1 September 1959 to 30 June 1969
2. Yang Berhormat Datuk Abdul Samad bin Idris from 1 July 1969 to July 1971
3. Yang Amat Berhormat Datuk Mansor bin Othman from 1 October to 31 July 1974
4. Yang Berbahagia Tan Sri Datuk Haji Hamdan bin Sheikh Tahir from 1 August to June 1983
5. Yang Berhormat Datuk Musa bin Mohamed from 1 July 1983 to 30 June 1986
6. Yang Berbahagia Dato' Haji Abdul Rahim bin Abu Bakar from 18 October 1986 until now

9.2 DBP Directors/Directors- General (taken from CITRA DBP 2002: 9)

The following persons have been the Directors/Directors-Generals of DBP since its establishment until now:

1. Ungku Abdul Aziz bin Ungku Abdul Hamid from 1956 to 1957
2. Tun Syed Nasir bin Ismail from 1957 to 1969
3. Datuk Ali bin Haji Ahmad from 1969 to 1970
4. Datuk Haji Sujak bin Rahiman from 1971 to 1976
5. Datuk Haji Hassan bin Ahmad from 1976 to 1988
6. Dato' Haji Jumaat bin Dato' Haji Mohd. Nor from 1988 t 1993
7. Dato Haji A. Aziz bin Deraman from 1994 until now

10. DBP's Organisational Chart

Based on DBP's organisational chart shown on **Figure 1.2 on page 28** in my thesis, we see that the Director General, Dato Haji Aziz bin Deraman heads DBP. Below him are the Internal Audit Division headed by Ariffin bin Abdul Wahid and the Legal Affairs Unit headed by Mohamad Isa bin Sapuan. The Language, Literature, Publication, Policy and Corporate Development Departments and the Malay Documentation Centre come directly under the Director General and the Deputy Director General who is Haji Abu Bakar bin Mohamad.

The **Language Department** comprises the following divisions:

1. Lexicography Division which is headed by Hajah Noresah binti Baharom
2. Public Sector Language Development Division headed by Hajah Zaiton binti Abdul Rahman
3. Private Sector Language Development Division which is headed by Hajah Izzah binti Abdul Aziz
4. Language Research Division which is headed by Rusli bin Abdul Ghani
5. Terminology Division which is headed by Hajah Halimah binti Haji Ahmad

6. International Malay Language Development Division which is headed by Atiah binti Haji Mohd. Salleh
7. Language Publication Division which is headed by Othman bin Ismail

The **Literature Department** comprises the following divisions:

1. Modern Literature Division which is headed by Haji Abdul Rahman bin Mohd. Yusof
2. National Literary Division which is headed by Hajah Zainab binti Kassim
3. International Literary Development Division which is headed by Padilah binti Haji Ali
4. Traditional Literature Division which is headed by Rogayah binti A. Hamid
5. Comparative Literature Division which is headed by Hajah Zalila binti Sharif
6. Literary Theory and Critic Division which is headed by Mohamad Daud bin Mohamad
7. Literary Publication which is headed by Sa'adah binti Abdullah

The **Publication Department** consists of the following divisions:

1. Social Science and Humanities Division which is headed by Wan Sakinah binti Wan Abraham
2. Islamic Religion, Philosophy and Civilisation Division which is headed by Haji Wan Abdul Hamid bin Wan The
3. Magazine Division which is headed by Zulkifli bin Salleh
4. Encyclopedia Division which is headed by Haji Khalid bin Haji Ahmad
5. Science and Technology Division which is headed by Othman bin Shariff
6. Textbook Division which is headed by Abdul Nasir bin Mohd. Razali
7. Copyright Division which is headed by Hajah Zaiton binti Haji Ajamain
8. Multimedia Division which is headed by Jamaluddin bin Mohd. Sulong

The **Malay Documentation Centre** is under Aizan binti Mohd. Ali and it has no divisions.

The **Policy and Corporate Development Division** comprises the following units:

1. The Corporate Communication Unit is headed by Rossilawaty binti Sheriff
2. The Socio-Cultural and Welfare Unit is headed by Hajah Rusdina binti Yunus

In 1977, DBP extended its wings to East Malaysia, that is in Sabah and Sarawak and this was followed by other branch offices which were set up in the Northern Region in Bukit Mertajam, Penang in 1999, the Eastern Region in Kota Bharu, Kelantan in 1999, the Southern Region in Johor Bharu, Johore in 2000.

The **heads of these branches** are as follows:

1. DBP Sabah Branch – Zaini bin Ojeas @ Ozea
2. DBP Sarawak Branch – Haji Hamzah bin Hamdani
3. DBP Northern Region – Haji Mohamad Yussop bin Ishak
4. DBP Eastern Region – Sallehuddin bin Abang Shokeran
5. DBP Southern Region – Zubaidi bin Abas

The Technical Support Service, Information, Administration, Personnel and Finance Departments also come under the jurisdiction of the Director General and the Deputy Director General of DBP.

The **Technical Support Service Division** is headed by Haji Abdul Razak bin Abdul and it comprises the coordination and monitoring divisions which include the following:

1. Pre-publishing and Publishing Division which is headed by Wan Azaham bin. Wan Mohmad.
2. The Store and Distribution Division which is headed by Mohammadan Makhtar bin Mohd. Salleh..
3. Publishing Monitoring Division which is headed by Abdul Khalik bin Sulaiman.
4. Design Division which is headed by Mohamed bin Ali.

5. Business Division which is headed by Mohd. Ramly bin Ngah Idris

The Information System has no divisions and it is headed by Sulaiman bin Kaiat.

The Administration, Personnel and Finance Department is headed by Mohd. Amin bin Abdullah and comprises the following divisions:

1. Personnel Management Division which is headed by Kusni bin Ahad
2. Finance and Supply Division which is headed by Hajah Azah binti Wahab
3. General Administration Division which is headed by Azman bin Mohamad Tahir
4. Security Unit which is headed by Mohd. Salleh bin Mahat

10.1 The Publication Unit of DBP

The publication unit of DBP consists of the following divisions:

1. Social Science and Humanities Division

The Social Science and Humanities Division is responsible for the publication of books for general reading and academic books, in the form of original works, translated works and adaptations. Books for general reading are targetted at kindergarten, children, adolescent and adult readers. Whilst, academic books are for adult readers and students of institutions of higher learning. The publication of books encompass various fields under Social Science and Humanities Division both in conventional and electronic form.

Some of the functions of the Social Science and Humanities Division are:

- (i) to plan, develop, source, evaluate, and edit manuscripts as well as manage manuscripts until published;
- (ii) to guide external experts such as writers, translators, evaluators, editors, adpators etc
- (iii) to develop professionalism amongst the Division's editors/writers in the field of publishing management.

Among the objectives of the division are:

- (i) to develop, enrich and prepare materials for general reading and academic materials for general reading and academic materials in Social Science and Humanities in the Malay language; and
- (ii) to nurture and develop the creative talents of writers, translators, editors and other creative personnel involved in Social Science and Humanities publication.

Among the projects undertaken by this Division include two fields, namely

- (i) Social Science: Economy/Management, Administration/Political Science, Culture/Women and the Society/Malay Civilisation, Law, Sports/Recreations and Social Services/Tourism;and
- (ii) Humanities: History, Geography, Communication and ICT, Psychology/Counselling, Arts/Performing Art/Fine Arts, Philosophy and Education

In addition, in order to promote the effective dissemination of knowledge, this Division has planned several series of discourses or dialogues among intellectuals which are held regularly. Among the titles discussed are *Perlembagaan Malaysia: Asas dan Masalah* (The Malaysian Constitution: Fundamentals and Problems) written by Dr. Abdul Aziz Bari and *Imbasan* (Glimpses) written by Dato' Dr. Hassan Ahmad, *Perkahwinan Melayu* (Malay Marriages) written by Dr. Amran Kasimin and 30 titles of *Siri Pengukuhan Bacaan Jawi Sekolah Rendah* (Mastering Jawi Reading for Primary Schools) were launched to promote these books to the public. Meanwhile the Tamadun Awal Lembah Bujang Colloquium was held specifically to expose students to the field of archeology.

In order to achieve the set objectives, it is hoped that the Division's efforts could be coordinated with DBP's objectives in planning and developing the Malay language through books publications in various fields of knowledge.

2. Islamic Religion, Philosophy and Civilisation Division

This Division was established on 2 January 1993 under the name Islamic Religion and Civilisation Project and was placed under the Publication Department. With the restructuring of DBP on 1 October 1995, this division was renamed the Islamic Religion, Philosophy and Civilisation Division. One of its functions is to publish philosophy books.

The division's vision is to identify external agencies as publishing partners and to develop writers capable of producing great works, and intellectuals in the fields of Islamic religion, philosophy and civilisation. The division's philosophy is to publish books in Islamic religion, philosophy and civilisation for various levels of readers. In addition, this division encourages ulama and muslim intellectuals to get involved in intellectual discourse programmes which discuss the problems facing the Islamic community and contemporary thinking through talks, seminars, forums and the likes held from time to time. This division has successfully come up with many publications in these areas.

3. Magazine Division

Initially, the publication of DBP's magazines was carried out by the respective divisions, i.e. General Publishing Division, Literature Division and Language Division. Effective from 1986, magazine publishing is handled exclusively by the Magazine Division under the Publication Department.

The objective of this move was to ensure that the publication of magazines and journals in various fields of knowledge is carried out with punctuality and factual accuracy. The division is also responsible for monitoring and ensuring that all magazines and journals published by DBP meet the highest standard in publishing, and by so doing, the division is fulfilling the publication objectives of DBP and preferences of customers such as students, undergraduates, scholars, writers and researchers.

Today, the division has successfully published five magazine titles and one journal, besides seven magazine titles and one journal title that have been franchised in November 1997. The franchised magazines and journals are *Dewan Pelajar*, *Dewan Siswa*, *Dewan Kosmik*, *Dewan Masyarakat*, *Dewan Ekonomi*, *Dewan Agama dan Falsafah* and *Jurnal Kanun*. The five magazine titles and one journal title still handled by the division itself are *Dewan Bahasa*, *Dewan Sastera*, *Dewan Budaya*, *Pelita Bahasa*, *Tunas Cipta* and *Jurnal Bahasa*.

The division publishes magazines and journals in various fields of knowledge with punctuality and factual accuracy being the prime objective. Among the publications of this Division are:

- (i) publication of *Dewan Bahasa* magazine as the voice of the Malay struggle, make sovereign the national language and at the same time develop and disseminate corpus and its usage to the Malaysian public;
- (ii) publication of *Dewan Sastera* magazine with the objectives, among others, to give prestige to literature ingrained with Malaysian values produced by quality literary talents;
- (iii) publication of *Dewan Budaya* magazine with its role to disseminate knowledge and information on thinking, philosophy and arts generated by thinkers and writers particularly local scholars or artistes for the benefit of the society;
- (iv) publication of *Pelita Bahasa* magazine with the aim of promoting a society proficient in the Malay language from as early as school age; and
- (v) publication of *Tunas Cipta* magazine with the aim of fostering a new generation of writers well-versed in Malay literature.

In addition, the division also executes the publication of *Jurnal Bahasa* with the following objectives:

- (i) to encourage research on the Malay language and languages of the same family, among scholars within and outside the country;
- (ii) to disseminate new discoveries in the field of language within and outside the country;
- (iii) to plan and develop the Malay language in the private and government sectors;
- (iv) to establish the theory and practice of teaching of the Malay language in schools and higher learning institutions; and
- (v) to communalise the Malay language in an effective manner for all levels of a multi-racial society.

4. Encyclopedia Division

The Encyclopedia Division was first established in 1987 as the Encyclopedia Unit. Later, the unit was renamed Encyclopedia Division. The change in name was in line with DBP's management decision to upgrade the status of the unit to a division in 1989.

The objectives of the formation of this division are :

- (i) to plan, enrich and develop the Malay language as the national language and the language for all fields of knowledge through the publication of various types of encyclopedia;
- (ii) to disseminate knowledge and information in the Malay language in a comprehensive, concise and established manner, and
- (iii) to assist in the formation of a progressive and scientific community, thus fulfilling the aspirations of the nation.

Until today, the Encyclopedia Division has successfully published five translated encyclopedia titles consisting of:

- (i) *Ensiklopedia Pelajar* (Student's Encyclopedia), a total of 9 volumes which were completely published in 1990;
- (ii) *Ensiklopedia Bahasa Utama Dunia* (Encyclopedia of Major Languages) 1 volume was published in 1998;
- (iii) *Encyclopedia Sejarah dan Kebudayaan Melayu* (Encyclopedia of Malay History and Culture), a total of 5 volumes fully published in 1999;
- (iv) *Ensiklopedia Sastera Dunia* (Encyclopedia of World Literature), a total of 6 volumes published in 2000;
- (v) *Ensiklopedia Sains dan Teknologi* (Science and Technology Encyclopedia), a total of 3 volumes published in 2000

In addition, the Encyclopedia Division is currently working on four encyclopedia projects, namely:

- (i) *Ensiklopedia Sains dan Teknologi* (Science and Technology Encyclopedia), a total of 9 volumes;
- (ii) *Ensiklopedia Dunia* (World Encyclopedia), a total of 22 volumes;
- (iii) *Ensiklopedia Bahasa dan Sastera Melayu* (Encyclopedia of Malay Languages and Literature), a total of 2 volumes.

In order to proceed with the development and publication of encyclopedia, the Encyclopedia Division is currently building a Management and Development System for Encyclopedia. With the system in place, all entries complete with text and illustrations will be stored in the Encyclopedic Data Base. If there is a request or a need to publish the encyclopedia, these entries can then be published either in conventional or electronic publication format. This would also allow the entries to be disseminated via websites.

5. Science and Technology Division

The Science and Technology Division was officially established on 25 January 1995. In line with the first phase of the restructuring of DBP on 1 October 1995, it was placed under the Technical Support and Services Department. However, in the second phase of the restructuring, this division was transferred to the Publication Department in January 1999.

Consistent with the function of the department, the division aspires to “Develop A Knowledge civilization through Science and Technology Works” with its philosophy, “Developing Science and Technology Works Towards the Creation of a Knowledgeable and Highly Cultured Society”.

The division is responsible for developing, enriching and preparing informative reading materials and quality references in the field of science and technology, particularly in the national language. In addition, the division also manages and executes editorial work for the preparation of clean manuscripts in order to meet the needs of the readers, i.e. the children, teenagers and adults categories and acquire titles and develop creative talents of writers, translators and other relevant creative people in the field of science and technology.

Initially, the division’s main function was the publication of projects carried out by the Translation Division, namely the publication of translated books for higher learning. However, from 1996 onwards, all projects and activities of this division shifted to publication of popular books for general reading under the pre-school (6 years and below), children (7 – 12 years), teenagers (13-18 years) and adults (18 years and above) categories. The types of publications in the division encompass original and translated works, and adaptations from Bahasa Indonesia or other languages into the Malay language, whether as informative or infocreative materials.

This division is also active in planning and implementing several projects, including:

- (i) executing publication projects for science and technology books for children, teenagers, adults and higher learning institutions, in original, translated and adapted format, from planning and building stage right up to clean manuscripts;
- (ii) giving cooperation to other units and divisions related to publication projects in science and technology;
- (iii) activate the writings of author/s either individual, group, company or institution through briefings, memoranda of understanding, joint projects and discourse series;
- (iv) improving the quality of writing and editorial through continuous guidance, workshops, courses and seminars;
- (v) upgrading professionalism of editorial staff through exposure to the current publishing constitution and the sharing of expertise; and
- (vi) implementing incentive and appreciation projects for authors through awards, such as *Hadiah Citra Pendeta* and *Hadiah Karya Ilmiah*.

6. Textbook Division

DBP has been handling the publication of school textbooks since its inception and this responsibility is very much in line with DBP's function as an agent of advancement and development of knowledge.

Initially, the publication of school textbooks involved the Educational Books Division, Islamic Religion, Philosophy and Civilisation Division and Literature Publication Division. Throughout the years, this structure was scrutinised, discussed and finally revamped after DBP realised that the importance and responsibility of the division needed to be executed in a much more planned and specific manner. Hence, DBP established the Textbook Division on 1 October 2001. With the establishment of

this Textbook Division, DBP's role as an authoritative publisher of textbooks will be further strengthened. This move will also streamline the project management system and expert human resources involved in textbook publication will be able to be working together as groups in a centralised location.

The division functions to handle textbook publication projects in various fields, including:

- (i) Primary School Textbooks covering subjects like Malay, English, Local Studies, Science, Mathematics, Physical and Health Education, Islamic Studies, Arabic and Moral Studies;while
- (ii) Publication of Secondary School Textbooks include Malay, Malay Literature, English Literature, History, Islamic Studies, Moral Education, Living Skills, and Vocational and Technical subjects.

7. Copyright Unit

The Copyright Unit was officially established in 1978. With the reorganisation of DBP in 1999, the Unit was placed under the Publication Department. However, this does not mean that before 1978, copyright matters was non-existent in DBP. The difference is that prior to this, it was not handled by a specific unit or division. This unit is responsible for administering all matters pertaining to copyright, publication licence agreement and payment of royalties for all original, translated or adapted works published by DBP to writers, publishers and copyright holders within and outside the country.

Among the functions of this unit are:

- (i) to prepare and handle the Publication Licence Agreement for each original and adapted book;
- (ii) to handle the Publication licence agreement for each original, translated and adapted book so that all books published by DBP are copyright protected;

- (iii) to handle the calculation of royalty payments and statement of sales to the writers/publishers within and outside the country;
- (iv) to prepare and handle payment of royalties and statement of sales to the writers/publishers within and outside the country;
- (v) to handle the sale of copyright of works published by DBP to the private sector/TV/publishers within and outside the country in line with DBP's aspiration to disseminate its publication to the society at large;
- (vi) to hold discussions and negotiations with writers/publishers from outside the country for the purchase of copyright licences for the purpose of book translation and adaptation; and
- (vii) to handle the sale of copyright of DBP's works to the private sector/TV/publishers within or outside the country.

8. Multimedia Unit

The Multimedia unit was established in November 1998 to complement DBP's print publishing. The formation of this Unit will bring about opportunities and a wider scope to DBP in expanding its efforts in the communalisation of the Malay language and executing its function in encouraging literary talents and disseminating reading materials in the Malay language on a bigger scale.

Within this context, the Multimedia Unit acts only as a secretariat for multimedia publishing. The planning of titles will still be handled by the respective departments or divisions and the titles will be planned based on the function of each division. There are three departments directly involved with this unit, namely Publication, Language and Literature Departments.

The Multimedia Unit is also responsible for Electronic Publication involving books, magazines, encyclopedias, dictionaries, terminologies etc. In line with the

responsibility of this division, the division's objectives are to publish reading materials and references in the Malay language in both electronic/multimedia and web format.

11. Services Provided By DBP

The services provided by DBP are discussed that is as described from A to C.

A. Translation Courses

The researcher was informed by Puan Sa'odah bt. Abdullah, who is the secretary of the Translation Association of Malaysia (PPM – *Persatuan Penterjemah Malaysia*) and also an officer with the Language Planning Division and the officer-in-charge of Translation Courses in DBP that translation courses are conducted by DBP with the help of PPM. Language courses are conducted by DBP with the help of the Linguistic Association of Malaysia (PLM – *Persatuan Linguistik Malaysia*). The DBP-PPM translation courses were prepared by a committee headed by Puan Ainon Mohamad, a translation authority who has written several books on translation, and this translation programme was launched by Professor Dr. Asmah Haji Omar. Presently DBP-PPM joint translation courses cover general translation and editing in translation. Under these programmes the following modules are offered at certificate level:

1. Law Translation
2. Translation for Science and Technology
3. Translation for Mass Communication
4. Editing In Translation

Each of these weekend courses are conducted for 60 contact hours every Saturday from 2.00 p.m. to 5.00 p.m. over a period of six months. For intensive sessions, the trainers provide these courses over a period of two weeks daily from 8.30 a.m. to 5.00 p.m. to various institutions who request for them. According to Puan Sa'odah, these are professional courses and not academic courses. The trainers here offer their services to educators and lecturers who wish to practice translation on a part-

time basis and for those who are involved in translating for the private sector and in editing work for publishers. Presently there are more than twenty trained instructors who are actually lecturers at various institutions of higher learning who offer their services to DBP on a part-time basis. For teaching Editing, DBP has trainers from broadcasting stations such as TV3. Those successful participants who pass their exams are given the joint DBP-PPM certificates at the end of their programme. Those who excel in their examination are often employed by DBP on a part-time basis to help in translation work here.

B. Language Department of DBP (taken from Citra DBP 2002: 23)

Language planning, which encompasses language planning and development is the primary function of DBP. In 1999, the Language Department with its seven divisions (see Figure 1.2), was entrusted to implement a more comprehensive and standardized language planning programme. This programme is based on two main components, that is, language planning and language development, structured to reinforce and widen the role of Malay as the national, official as well as a language of knowledge at national level besides widening the role of Malay as the official language for communication, commerce and knowledge at regional and international levels.

C. Modernisation of Malay Language Corpus (taken from Citra DBP 2002:31-43)

The modernisation of the Malay language corpus spreads through various programmes, that is, Online Computerised Terminology Bank (Bikomta), Regional Level Language Co-operation, the Planning and Development of Malay Language Corpus, Malay Standardised Pronunciation, Compilation and Writing of the History of the Malay Language, Codification of the Malay language through Lexicography and Computerisation of the Malay language. These are discussed below.

1. On-line Computerised Terminology Bank (Bikomta)

The use of computers in terminology work is on the increase. DBP has established an Online Computerised Terminology Bank (Bikomta), which is a computerized information storage and recording system of the terminologies published by DBP. This system was started in the early 1980's with the cooperation of Universiti Sains Malaysia (USM). Bikomta's capacity is increased from time to time in order to provide the most up-to-date and complete information on each terminology. Translators in Malaysia buy these terminology lists which are prepared and endorsed by DBP and use these while translating.

2. Regional Level Language Cooperation

The establishment of the Indonesia-Malaysia-Language Council (MBIM) in 1972 started a new era in language cooperation in this region. With the participation of Brunei Darussalam in the cooperation, MBIM expanded to become the Brunei Darussalam-Indonesia-Malaysia Language Council (MABBIM) in 1985. Singapore regularly followed MBIM and MABBIM sessions as an observer since 1983. The cooperation has resulted in the standardization of guides for spelling and transliteration, coining of terminologies as well as the standardization of terminologies for higher learning and professional studies.

Pedoman Umum Ejaan Bahasa Melayu and *Pedoman Umum Pembentukan Istilah Bahasa Melayu*, which have greatly assisted terminology work are the most important products of the aforesaid co-operation. After nearly 25 years of their establishment, MBIM/MABBIM have succeeded in producing language related materials for dissemination in the three countries. A total of 164,049 terms have been unanimously accepted for various disciplines and subdisciplines. In addition, a total of 40 dictionaries of terminologies were published in the period of 1986-2002, while a number of others are being compiled.

Among the works related to terminology, published during the last two decades are :

- (i) Guides and Register (six titles)
- (ii) Dictionary of Terminologies (40 titles);
- (iii) Proceedings of Linguistic Seminars (three issues);
- (iv) Regional Journals (three issues);
- (v) Special Issues: Conferences and Resolutions 1972-1992; *Ke Arah Pembentukan istilah yang Sempurna*; General Guidelines for the Formation of Terms in Malay; General Guidelines for Malay Spelling; Guide for the Compilation of the Terminological Dictionaries; and MABBIM: *Wahana Kebahasaan Serantau yang Akrab, Mantap dan Berwibawa*.

For almost 46 years, that is until 2002, DBP, through its publications, has successfully disseminated a total of 752,988 terms in various disciplines and the coining of terminologies will continue.

3. The Development and Enhancement of the Malay Language Corpus

During the last four decades, DBP's planning has successfully and effectively developed and expanded the usage of the Malay language as the country's national and official language. The planning and development of the Malay language corpus that is based upon academic research on language and its usage in society, is aimed at standardizing and establishing various aspects of the language, such as the spelling system, pronunciation, grammar, history of the Malay language, as well as the planning and development of the language as a whole.

4. Malay Standardised Pronunciation

Planning for the standardization of Malay pronunciation is one of DBP's objectives as stipulated in the *Dewan Bahasa dan Pustaka Act 1959* (revised 1978/95) which is :

- “(iv) To standardize the spelling and pronunciation and to coin appropriate terminologies in the national language”.

The latest official standardized Malay pronunciation is based on the *Pedoman Umum Sebutan Baku Bahasa Melayu* (1988), *Daftar Umum Sebutan Baku Bahasa Melayu* (1991), and *Pedoman Sebutan Baku Bahasa Melayu* (1994).

5. The Compilation and Writing of the History of the Malay Language

The compilation of the history of the Malay language was started in early 1984 and until late 1995, a total of eleven publications in the Malay Language History Monographs were published. In 2000, the Language Department explored yet another aspect in the compilation of the History of the Malay Language, on top of continuing the study of the written language.

6. Language Codification through Lexicography

Codification or the coding of the Malay language is believed to have started since the early part of the 20th century with the publication of a dictionary *Kitab Benih Bahasa* by Fadhil Jaafar in 1917. This was the first Malay dictionary published in the 20th century. *Kamus Muhamudiah* (1925) compiled by Syed Mahmud Syed Abdul Kadir al-Hindi came next, followed by *Kamus Melayu* (1935) compiled by Shamsuddin Yunus al-Haj, *Buku Katan P.Bm.P.B. Diraja Johor* (1936), *Kamus Angkatan Bahasa Melayu* (1957) compiled by R.O. Winstedt. Later, *Kamus Am Bahasa Melayu* (1961) compiled by Md. Shah Jetty was published.

The first monolingual lexicon, *Kamus Dewan* was published by DBP in 1970, and was reprinted in 1984, albeit with the spelling modified to follow the new spelling system. Its second edition, *Kamus Dewan Edisi Baru* was published in 1989, and the third edition in 1994.

Kamus Bahasa Melayu Edisi Pelajar, which is the students edition was published in 1975. Subsequently, *Kamus Pelajar Bahasa Malaysia* was published in 1983. *Kamus Pelajar* was compiled based on *Kamus Bahasa Malaysia Edisi Pelajar*

and a large part of the contents were taken from the said dictionary, albeit, with minor modifications.

Apart from monolingual dictionaries, dictionaries in various languages are also vital for Malay language codification. These dictionaries were aimed at fulfilling the demands of Malaysian society made up of various races and ethnic groups. Based on this realisation, *Kamus Dwibahasa, Bahasa Inggeris-Bahasa Malaysia*, which was started in 1971 was published in 1979.

Meanwhile, in 1977, the Australian National University, Canberra requested DBP to continue the compilation of the English-Malay Dictionary and it was finally published in 1991. Apart from the bilingual English-Malay dictionary, a number of other bilingual dictionaries are being compiled by DBP and these include from Tamil, Mandarin, Korean and French to Malay.

DBP is also focused on publishing dictionaries in specific and technical areas. From the resolution of the 14th MBIM Conference in Bali, terminologies in Hydrology, Meteorology and Demographics were prepared as materials for exchange in the 15th MBIM Conference in September 1980. Finally, the compilation of *Kamus Istilah Hidrologi*, based on the outcome of the first, second, third and fourth MBIM-UNESCO Hydrology group studies was completed and published in 1982.

In its efforts to widen the usage of Malay among the various ethnic groups in Malaysia, a number of specific dictionaries were published such as the *Kamus Bahasa Iban-Bahasa Malaysia* in 1989.

A number of dialect glossaries were also prepared and among them were: *Glosari Dialek Trengganu*, *Glosari Dialek Kedah* etc. The first Malay thesaurus, *Tesaurus Umum Bahasa Melayu* was published by DBP in 1990, and *Tesaurus Linguistik Bahasa Melayu* followed in 1995.

7. Computerisation of the Malay Language

Computerisation of a language, in its wider perspective, involves two main aspects, that is the preparation of the infrastructure and language processing. From the linguistic perspective, language processing (specifically natural languages) means language computerization per se. However, the planning and development aspects at the system which merely automated routine tasks previously handled manually, is not considered "computerization". DBP's computerisation efforts include the following:

a. Computerised Malay Language Database

The purpose of developing a computerized Malay Language database is to integrate all the existing computerised linguistic activities and programmes so as to be easily and mutually accessible. The Computerised Malay Language database contains various data and language computerised system, that is Computers Terminology System (see discussion of Bikomta under C1 on page 38), Lexicon, Corpus and Lexicography data bases, a general database on Malay language, and a language advisory service system.

b. Lexicon Database

A lexicon data base was created with the aim of designing and developing a lexicon system that can be used to store all information regarding Malay words, including information. e.g. spelling (Romanised and Jawi), pronunciation (standard and non-standard) meaning (denotative, connotative etc) morphology, syntax and etymology.

The Lexicon Data Base is made up of the system built by USM and the Malay language main register system (Dafin BM) developed in DBP. It was developed in the late 1980's, while a proto-type lexicon system was completed in 1990. Data development is actively carried out through the co-operation between DBP and USM.

c. Corpus Database

The objective of the Corpus Database is two-fold, i.e. the development of a corpus system and the collection of 50 million words by 2000. The corpus system has been built to process and organize comprehensive raw data on Malay language into output form which consequently will be the basis for analysing and studying the Malay language, especially for the compilation of various types of dictionaries. The corpus data are categorized under original works, translated works, classical books, newspaper, magazines and other ephemeral data, poems, dramas and material cards.

d. Lexicography Database

Briefly, the objectives of the Lexicon Database are to design and develop a lexicography system that can be used to store all dictionaries published by DBP into a single lexicography database. It could subsequently be the basis for compiling new dictionaries and generate dictionaries derived from those already in existence in the lexicography database.

In the near future, the Lexicon Database will be operable at graphic user or Window interface environment, with processing being done on or off-line, and access through LAN and WAN.

e. General Database for Malay Language

The General Database for Malay Language is one of the visions of DBP to be developed to store all information on the language, especially books and reference materials related to guidelines and language formulas. This database is still at its developmental stage. All research pertaining to language should, as far as possible, be done using the computer, while published linguistic materials should be transformed to computer literate forms and be inserted into the General Database for Malay Language.

The database was developed with the aim of storing information in the form of reliable published texts, e.g. *Pedoman Umum Pembentukan Istilah Bahasa Melayu*,

Pedoman Umum Transliterasi Arab-Rumi, Daftar Ejaan Rumi and Daftar Umum Sebutan Baku Bahasa Melayu; information on researchers and experts involved with DBP; information on language research specifically by DBP in the past, present and future and by other linguistic bodies in general; and all softwares used to process language, such as spelling and grammar checkers, taggers, analysers etc.

The database will become the complete and up-to-date general reference research source to be used by the public and researchers through LAN and WAN for reference or research purposes.

Publication Department (taken from CITRA DBP: 137-153)

The Publication Department which was officially established in 1986 initially comprised three main divisions, namely the Textbook Division, the Translation Division and the Magazine Division. The restructuring of DBP in 1995 and 1999 also involved the restructuring of the Publication Department. This restructuring exercise was in line with the current and future development of DBP's publishing programme.

Since the inception of DBP, among the functions of the Publication Department is to handle manuscripts up to camera ready copies (CRC). In addition, this department also organises other activities such as conventions, colloquiums, intellectual discourses, congresses and other publishing activities with the objective to thrust the Malay language forward to be one of the world's major languages.

In an effort to support DBP's vision and objectives, the division has set some targets that need to be achieved. Amongst them are:

- (i) to publish materials for reading, reference and infotainment in the Malay language in various fields for all levels of readers through the print and electronic media;
- (ii) to disseminate materials for reading, reference and infotainment in the Malay language through translation into other languages,

- (iii) to build up collections of Malay reading materials.

12. How Terminology Is Coined

This research does not deal with terminology coinage. Under this section, the researcher will give the viewpoints on how terminology is coined at DBP as given by:

1. Hasnah Mohamad, a language planning officer at DBP
2. an officer of the terminology division at DBP who wishes to remain anonymous
3. the experienced linguist, Professor Asmah (1979)

12.1 A DBP Language Planning Officer - Hasnah Mohamad

According to Hasnah Mohamad (2001:7), in her Master's dissertation entitled *Kajian Diakronik Penterjemahan Istilah Biologi: Satu Analisis Morfologi dan Semantik*, the process of terminology coinage at DBP is stipulated by the *Jawatankuasa Tetap Bahasa Melayu* (JKTBM) – the Permanent Malay Language Committee. In her dissertation which is written in the Malay language, she quoted Felber (1995:151-153) who suggests that in coining terminology, the terms chosen must not be :

1. polysemous, that is a word having two or more closely related meanings for e.g. *foot* (Richards J.C. et al. 1992:282) in "He hurt his *foot* (*lowest part of the body*), and "She stood at the *foot* (*lowest part*) of the stairs".
2. homonyms, that is words which are written in the same way but which are pronounced differently and have different meanings for example (Richards J.C. et al. 1992:168) the English word *lead* /li:d/ in Does this road *lead* to town? and *lead* /led/ in *Lead* is a heavy metal.
3. synonymous, that is a word which has the same, or nearly the same, meaning as another word. For example (Richards J.C. et al. 1992:368) in English *hide* and *conceal* in: He *hid* the money under the bed. He *concealed* the money under the bed.

4. they should not involve a change in meaning, involving use of new terms and transliteration (write words or letters in or as the letters of a different alphabet for example Greek place-names into Roman letters).

12.2 An Officer of the Terminology Division

However, according to an officer of the terminology division in DBP, who wishes to remain anonymous, a subject specialist is first contacted from a university. He or she is asked to make a list of all the words that are necessary to understand his or her specific subject area, for example, in Physics, just the area of "Optics". A committee is then formed comprising language specialists from DBP and some other lecturers in this field from other universities. They sit and thrash out the appropriate equivalent terms in the Malay language. After many meetings, the manuscript for the terminology list on "Optics" is prepared and submitted for publication. This list is then used by translators who are translating English language texts on "Optics" into the Malay language. This procedure is likewise used, for other areas in science.

12.3 A Terminology Committee Member - Professor Asmah Haji Omar

For this section, all the ideas and points given are the voice of Asmah (1979). For this study, wherever Asmah (1979) uses the phrase "technical term", the researcher will take it to mean a scientific term as science comes under technical translation and in this study it refers to scientific translation.

Asmah (1979:100) writes that the planning for a scientific terminology consists of a common Malaysian-Indonesian programme which commenced in 1972. According to her, the chosen officers from both countries have been meeting twice a year to discuss their common problems in the planning for a lexicon that is efficient enough for use in the scientific register and comprehended by people from both countries. In these meetings, she points out that each country is represented by a team of 8-10 people. The Malaysian team according to her is officially known as *Jawatankuasa Tetap Bahasa*

Malaysia (Permanent Committee for Malaysian), while its Indonesian counterpart is *Panitia Perkembangan dan Pembinaan Bahasa Indonesia* (Committee for the Propagation and Development of Indonesian). When these two Committees meet, the congregation she points out is known as *Majlis Bahasa Malaysia-Indonesia* (Council for Malaysian and Indonesian).

Furthermore she adds that the Permanent Committee is headed by the Director-General of the Dewan Bahasa dan Pustaka (DBP) who has this agency as its secretariat. However, according to her this is a ministerial committee in the sense that members are appointees of the Minister of Education and the committee is directly responsible to him. Except for two experts in the natural and physical sciences, the members are linguists. Experts from the various fields of study are co-opted into the committee when discussions involve their own academic discipline. The committee, however, does not coin technical terms in the strict sense of the word. According to her, from 1972 to 1975, with the help of experts from the various sciences this committee formulated rules for the coining, borrowing and writing of technical terms. The proposed formulas are taken to the meetings of the Council which finally decides on the standard rules to follow for both Malaysia and Indonesia. After three long years and seven Councils (each lasting for a week), a common set of rules on the formation of technical terms for Malaysian and Indonesian was produced. The Malaysian version was known as *Pedoman Umum Pembentukan Istilah Bahasa Malaysia* (A Common Guide to the Formation of Technical Terms for Malaysian).

Asmah (1979:101) writes that it was not the Council's task to form technical terms. She writes that this task is assigned to committees of experts in the various fields in each country. According to her, in Malaysia, the various committees on technical terms are administered by the DBP, but members are drawn from the universities and government as well as quasi-government departments where experts are available.

Hence, the DBP has at the moment about 27 committees which are assigned with the task of producing technical/scientific terms for Mathematics, Physics, Biology, Chemistry, Geology, Civil Engineering, Architecture etc. The technical terms produced by these committees according to the rules sanctioned by the Council are taken up to the Permanent Committee at the national level. This committee will study these terms, to see to it that the rules have been faithfully obeyed. Any issue that may arise from the sets of technical terms from any particular discipline submitted will be debated within this Committee, usually with the presence of at least the chairman of the subcommittee responsible for the terms of the discipline concerned.

Asmah (1979:101) further writes that at the meeting of the Malaysian-Indonesian Council, both parties submit their products for a bilateral consideration. Not all the academic disciplines are brought to discussion at any single Council., predetermined at a previous Council. This means that at least one representative from each particular subcommittee viz discipline must be present at the meeting of the Council. The full members of the Council are always there to give their advice to the various committees on the general rules and linguistic as well as sociolinguistic principles which may arise in the process of creating the technical terms.

According to Asmah (1979:102), the issuance of the Malaysian-Indonesian rules for the formation of technical terms in August 1975, has affected DBP the most where prior to 1972, DBP had printed a number of books containing glossaries of technical terms of various subjects which were coined according to the rules adopted by individual sub-committees and with the arrival of August 1975 with the issuance of the Malaysian-Indonesian rules, these books could no longer be issued to the public.

Asmah (1979:102) further writes that the meeting of the Malaysian-Indonesian Council is an on-going biannual affair. A number of disciplines have been covered by the Council such as Chemistry, Biology, Physics, Mathematics, Geology, Education,

Civil Engineering etc. This does not mean that these sciences and fields of study have had a complete and efficient set of technical terms. It only means that they have been represented in the meetings of the Council and have submitted their views on the common rules and whatever technical terms that have been accomplished. Most of these committees are of the opinion that the rules are adequate for their own disciplines, and hence find it unnecessary for any more modifications or additions. A few disciplines do need some special set of rules as a supplement to the general rules. These are Biology, Chemistry, Physics and Mathematics.

As a language of science, Asmah (1979:103), suggests that the Malay language is still lacking in efficiency, specifically in its scientific vocabulary to convey scientific concepts which arise along with the progress of the country in the field of science and technology. In order to evolve an efficient set of technical terms, the adaptive attitude should override the conservative one. Hence, care must be taken to determine which foreign lexical item should be borrowed and which should be rejected. The rejection of a foreign term according to Asmah (1979:103) may be due to the existence of a correspondence in the native language or to the fact that the native correspondence can be formulated from native elements. Asmah (1979: 103) suggests that an efficient technical term should have the following characteristics:-

- (i) conciseness of form;
- (ii) preciseness of meaning;
- (iii) congruity of concept;
- (iv) potentiality of being easily defined;
- (v) suitability to the phonology, morphophonemics and grammar of the language.

In addition to the above, Asmah (1979:112) suggests that technical terms are a set of lexical items whose usage is restricted to particular registers only. As such, the standardisation of technical terms constitute the standardisation of the elements that

compose them. As a technical term does not always consist of a word per se, but may also be represented by a sequence of words in the form of reduplications, compounds and phrases, the elements of the technical term are the phonemes, the morphemes and the words. As a corollary to this, the construction of the word or that of the phrase. Asmah (1979:112) suggests that the standardisation of the technical terms then entails the following:

- (i) The standardisation of the spelling system which presupposes the standardisation of the phonology of the language.
- (ii) The standardisation of the grammar of the language.
- (iii) The standardisation of rules and principles for the determination of lexical items.

Some of the examples of the terminology coined by the Council as proposed by Asmah (1979:107-122) are shown in Table 1.4 on page 52.

Asmah (1979:125) further writes that the words that are agreed on by the various sub-committees have to be approved by at least the language planning committee of each country at the national level before they can be made public. However, the lists of the terms produced at the national level will still have to be endorsed as the standard terms by the Council for Malaysian and Indonesian. Making the technical and scientific terms public means disseminating these terms to the various bodies who form their consumers. In practice, the technical and scientific terms of the subcommittees are brought back for use by the various universities and institutions by the experts on the committees. The printing of these technical terms is done by DBP.

The researcher feels that the above process for planning scientific terminology is very time-consuming and tedious and it is because of this that translators who come across words that are not in the terminology lists prepared by DBP become worried and are afraid to coin their own terms. They have to get approval from DBP on whether

their own terminology coinage is accepted and again this takes time and this leads to delays in the submitting of their translated texts in the target language.

A sample terminology list is given in Table 1 below.

Table 1

A Sample Terminology List

(Some Examples of Scientific Terminology from English to Malay)

No.	English Language	Malay Language
1.	To operate on	<i>Mengoperasikan</i>
2.	Is operated on	<i>Dioperasikan</i>
3.	Operand	<i>Yang dioperasi</i>
4.	Limestone	<i>Batu kapur</i>
5.	Cubic packing	<i>Susunan kiub</i>
6.	Nuclear central density	<i>Ketumpatan nukleus pusat</i>
7.	Thermal efficiency	<i>Kecekapan terma</i>
8.	Magnetic susceptibility	<i>Keterentanan magnet</i>
9.	Jacobian transformation	<i>Transformasi Jacobi</i>
10.	Rich	<i>Kaya</i>
11.	Isotope	<i>Isotop</i>
12.	Isotopy	<i>Keisotopan</i>
13.	Operator	<i>Operator</i>
14.	Condensor	<i>Kondenser</i>
15.	Conductor	<i>Konduktor</i>
16.	Read	<i>Baca</i>
17.	Energy changes	<i>Perubahan tenaga</i>
18.	Periodic law	<i>Hukum perkalaan</i>
19.	Ethyl acetate	<i>Etil asetat</i>
20.	Ferrous oxide	<i>Ferus oksida</i>
21.	Metal	<i>Logam</i>
22.	Heat	<i>Haba</i>
23.	Furnace	<i>Relau</i>
24.	Luminous intensity	<i>Keamatan cahaya</i>
25.	Nitrogen	<i>Naitrogen</i>

(taken from Asmah, 1979:107-122)

APPENDIX C

HASNAH MOHAMAD'S E-MAIL

[INBOX] : 45 of 82

Previous | Reply | Reply to all | Forward | Print | Delete | Back
--go to folder--

Subject: Re: Bagaimanakah proses pembentukan istilah sains di DBP

Date: 14:17:30 07.05.2003

From: hasnahmohamad@yahoo.com

To: Kulwindr Kaur <kulwindr@um.edu.my>

Show headers

--- Kulwindr Kaur <kulwindr@um.edu.my>; wrote:

>

>

> Hasnah,

>

> Saya sekarang sedang menulis tesis PhD dibawah

> penyelia Dr. Asha Doshi yang juga merupakan penyelia

> anda bagi tesis Master. Dr. Asha telah memberi

> email anda kepada saya untuk membantu saya kerana

> anda bekerja dengan DBP. Soalan saya adalah

> berikut:

>

> Bagaimanakah terminologi sains dibentuk? ~ saya nak

> tahu prosesnya.

>

> Bolehkah Hasnah memberi langkah demi langkah proses

> pembentukan istilah sains kepada saya secepat

> mungkin.

>

> Saya akan amat berterimakasih sekiranya saudara sudi

> menolong saya yang sedang menulis tesis PhD.

>

> Sekian, terima kasih.

>

> Yang benar

> Kulwindr Kaur

>

> -----

> <http://www.um.edu.my>

> Saudari Kulwindr,

Maaf, lambat balas e-mel saudara kerana saya jarang

sekali membuka e-mel di alamat ini-server terlalu

lambat dan membuang masa menunggu, saudara boleh

hubungi saya di alamat e-mel hasnah@dbp.gov.my di lain

kali nanti.

Proses pembentukan istilah sama ada istilah sains atau

bidang-bidang bukan sains adalah sama, ringkasnya

adalah seperti yang berikut :

1. Perlu ada istilah sumber (sama ada istilah bahasa

Inggeris atau bahasa-bahasa lain)

2. Dapatkan konsep/makna istilah itu, kemudian cari

padanannya mengikut keutamaan yang berikut ;

- a. Pilih kata dalam bahasa Melayu, sama ada bahasa standard atau dialek(jika tiada)
- b. Pilih kata dalam bahasa serumpun(e.g. Jawa/Indonesia)(jika tiada)
- c. Pilih kata dalam bahasa Inggeris/sumber dan ubah suai ejaannya mengikut pedoman ejaan bahasa Melayu(jika tiada)
- d. Ambil secara terus istilah asing tersebut (e.g.ad valorem, in situ)

Sebenarnya proses pembentukan istilah adalah lebih banyak melibatkan penterjemahan kerana kita tidak membuat penemuan baru, misalnya dalam mencipta sesuatu peralatan atau penemuan tentang sesuatu penyakit atau ubat baru. Jadi, kita meminjam konsep yang sedia ada dalam istilah asing yang kita terjemahkan itu.

Sekiranya kita ada membuat temuan baru, maka sepatutnya kita mengikut langkah memberikan istilah dalam bahasa Melayu bagi temuan(sama ada dalam bentuk proses, benda, dsb.) berkenaan. DBP dengan kerjasama serantau (Brunei dan Indonesia) telah menerbitkan Pedoman Umum Pembentukan Istilah Bahasa Melayu (1972). Saudari bolehlah mendapatkan buku berkenaan untuk mendapatkan penjelasan lanjut. Saya sedia membantu sekiranya ada yang tidak dapat difahami. By the way, tesis saudara tentang apa? Sebab saya pun sedang berura-ura nak sambung belajar, saya nak buat tentang peristilahan tapi lebih kepada applied, i.e. penggunaan istilah dan glosari di premis tertentu. Sekian, harap dapat serba sedikit membantu.

HM/

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APPENDIX D

QUESTIONNAIRE FOR TRANSLATORS IN THE FIELDS OF SCIENCE AND TECHNOLOGY

SOAL SELIDIK UNTUK PENTERJEMAH DI DALAM BIDANG SAINS DAN TEKNOLOGI

THE CONTENTS OF THIS FORM ARE ABSOLUTELY CONFIDENTIAL. INFORMATION IDENTIFYING THE RESPONDENTS WILL NOT BE DISCLOSED UNDER ANY CIRCUMSTANCES.

MATLUMAT DIDALAM BORANG INI AKAN DIRAHSIAKAN DAN MATLUMAT MENGECEM RESPONDEN TIDAK AKAN DIDEHAHKAN DIDALAM APA JUA SITUASI.

INSTRUCTIONS/ARAHAN

PLEASE ANSWER THE QUESTIONS ON THE TRANSLATION OF BOOKS AND MATERIALS ON SCIENCE AND TECHNOLOGY FROM ENGLISH LANGUAGE INTO THE MALAY LANGUAGE AS ACCURATELY AS POSSIBLE. YOU CAN ANSWER EITHER IN THE MALAY LANGUAGE OR ENGLISH LANGUAGE OR IN BOTH THE LANGUAGES. PLEASE TICK (✓) THE CORRECT ANSWER WHEN YOU SEE THE BOX (). PLEASE RETURN THIS COMPLETED FORM USING THE REPLY ENVELOPE PROVIDED.

TOLONG JAWAB SEMUA SOALAN MENGENAI TERJEMAHAN BUKU DAN BAHAN SAINS DAN TEKNOLOGI DARI BAHASA INGGERIS KE BAHASA MALAYSIA SETEPAT YANG BOLEH. ANDA BOLEH MENJAWAB SOALAN SAMAADA DALAM BAHASA INGGERIS ATAU BAHASA MALAYSIA ATAU MENGGUNAKAN KEDUA-DUANYA. TOLONG TIK (✓) JAWAPAN YANG BETUL APABILA ANDA MELIHAT KOTAK INI (). TOLONG KEMBALIKAN BORANG YANG TELAH DIISI DENGAN MENGGUNAKAN SAMPUL SURAT YANG TELAH DIBEKALKAN.

I. BACKGROUND/LATAR BELAKANG

1. SEX/JANTINA: MALE/LELAKI ☐ FEMALE/PEREMPUAN ☐
2. AGE/UMUR: BELOW 25 ☐ 26-35 ☐ 36-45 ☐ ABOVE 46 ☐
BAWAH 25 ATAS 46
3. RACE/BANGSA: MALAY ☐ CHINESE ☐ INDIAN ☐ OTHERS ☐
MELAYU CINA INDIA LAIN-LAIN
4. Present Occupation/Pekerjaan Sekarang:
WITH GOVERNMENT/DENGAN KERAJAAN ☐ PRIVATE/SWASTA ☐

PLEASE STATE NAME OF JOB/NYATAKAN NAMA PEKERJAAN

5. QUALIFICATIONS/KELAYAKAN

a. ACADEMIC/AKADEMIK:

GRADUATE/SISWAZAH ☐

NON-GRADUATE /BUKAN SISWAZAH ☐

STATE YOUR FIELD/ NYATAKAN BIDANG ANDA

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b. LANGUAGES/BAHASA: FILL IN THE TABLE BELOW/ ISIKAN JADUAL DIBAWAH

(For example, 1,2,3 etc for SPM or Principal A,B, C for STPM/ Contoh 1, 2, 3 dsbnya untuk STPM)

LANGUAGES/BAHASA	SPM	STPM
BAHASA MALAYSIA		
ENGLISH LANGUAGE		

II TRAINING IN TRANSLATION/LATIHAN DALAM PENTERJEMAHAN

6. Have you received any training in translation?

Adakah anda menerima latihan dalam terjemahan?

YES/YA

☐ (Go to question 7/Sila pergi ke soalan 7)

NO/TIDAK

☐ (Go to section III/ Sila pergi ke Bahagian III)

7. If yes, where did you receive it?

Jika ya, dimanakah anda menerima latihan dalam penterjemahan?

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8. In your training, were you taught about the general and specific theories and processes of translating books and materials on Science and Technology from English Language into Bahasa Malaysia?

Di dalam latihan terjemahan, adakah anda diajar tentang teori am dan spesifik mengenai proses menterjemah buku dan bahan Sains dan Teknologi dari Bahasa Inggeris ke Bahasa Malaysia?

YES/YA ☐

NO/TIDAK ☐

9. If no, what was lacking in the training?

Jika tidak, apa yang anda dapati kurang dalam latihan?

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III PRACTICAL EXPERIENCE/PENGALAMAN PRAKTIKAL

10. How many years have you been translating?
Berapa tahunkah anda telah membuat penterjemahan?

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11. Are you doing translation on a full-time or part-time basis?
Adakah anda membuat terjemahan secara penuh masa atau secara sambilan?

FULL TIME/PENUH MASA ☐ PART-TIME/SAMBILAN ☐

12. Are you good and proficient in both English Language and the Malay Language?
Adakah anda baik dan pakar dalam Bahasa Inggeris dan Bahasa Melayu?

YES/YA ☐ NO/TIDAK ☐

13. Are you able to translate from English language into the Malay language a book on a subject that you are qualified in for example, Biology, Physics, Medicine, Engineering etc. that you are good in or are a specialist in?
Bolehkah anda menterjemah dari Bahasa Inggeris ke Bahasa Melayu sebuah buku mengenai satu bidang seperti Biologi, Fizik, Perubatan, Kejuruteraan dan sebagainya yang anda pakar dalam?

YES/YA ☐ (Go to question 15)
(Sila pergi ke soalan 15)

NO/TIDAK ☐ (Go to question 14)
(Sila pergi ke soalan 14)

14. Please give your reasons for being unable to translate?
Berikan sebab-sebab mengapa anda tidak dapat menterjemah?

N

15. How many books and materials on Science and Technology have you translated from English language into the Malay language?

Berapa banyakkah buku dan bahan Sains dan Teknologi yang anda telah menterjemah dari Bahasa Inggeris ke Bahasa Melayu?

Numberofbooks/*Bilangan Buku*:.....

Numberof Materials/*Bilangan Bahan*:.....

IV. PUBLISHING/PENERBITAN

16. How many of your translated books have been published?

Berapa banyakkah buku yang telah diterjemahkan oleh anda yang telah diterbitkan?

.....books.

.....buku

17. Please list the titles of the books and materials published and the year they were published in.

Tolong senaraikan tajuk-tajuk buku dan bahan yang telah diterbitkan dan tahun ianya diterbitkan.

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V. THE TRANSLATION PROCESS/PROSES PENTERJEMAHAN

18. When given a text to translate, what are all of the steps that you have to go through? List them in order of priority.

Apabila anda diberi satu teks untuk diterjemahkan, apakah langkah-langkah yang anda jalani semasa menterjemah? Senaraikan langkah-langkah didalam susunan mengikut keutamaan atau kepentingannya.

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19. How long does it take you to translate a page of about 250 words?

Berapa lamakah anda ambil untuk menterjemah satu mukasurat yang mengandungi 250 perkataan?

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20. Are you given deadlines to meet for your translations, for example ITNM gives you 1 month or 2 months to complete the translation of a book?

Adakah anda diberi satu tarikh tertentu untuk menghabiskan sesuatu terjemahan, misalnya, ITNM memberi anda tempoh 1 atau 2 bulan untuk habis menterjemahkan sebuah buku?

YES/YA

☐

NO/TIDAK

☐

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21. What are the support materials that you use to help you to translate for example, English-Malay dictionary, terminology books etc.?

Apakah bahan-bahan sokongan yang anda gunakan untuk membantu anda menterjemah misalnya, kamus Inggeris-Melayu, Buku Istilah dsbnya?

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22. While translating, is there anything that you need but do not have with you for example, a computer, a typist, a body or organization whom you can contact for clarification of terms etc.? Please list them.

Semasa menterjemah, adakah terdapat sesuatu yang anda perlu tetapi tidak mempunyainya misalnya komputer, tukang taip, satu badan yang anda boleh menghubungi untuk bantuan dalam istilah dsbnya.? Tolong senaraikan.

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23. What are the problems and difficulties that you face when translating books and materials on Science and Technology from English Language into the Malay language? Please tick (/) the ones that cause problems from the list given below.

Apakah masalah dan kesusahan yang anda hadapi semasa menterjemah buku dan bahan Sains dan Teknologi dari Bahasa Inggeris ke Bahasa Malaysia? Harap tik (/) yang mendatangkan masalah dari senarai dibawah.

- a. Style and concord of the written language of Science and Technology.

Gaya dan laras penulisan Sains dan Teknologi: → ☐

- b. Use of cohesive devices-how the ideas are connected with each other.

Kegunaan kata perhubungan-bagaimana ide-ide dihubungkan antara satu sama lain → ☐

- c. Symbols and Formulas for example Ca., H₂O ,etc.

Simbol dan Formula seperti Ca, H₂O dll. → ☐

- d. Acronyms for example NASA, AIDS etc.

Akronim misalnya NASA, AIDS dsbnya. → ☐

- Gantinama misalnya saya, anda, dll.* → □

- Istilah, misalnya mencari satu perkataan yang sama makna bagi 'sodium*

☐

- Bentuk pasif.* \rightarrow \square

→

- Ejaan.* →

- Gambarajah, carta, penerangan gambar dsbnya. → ☐

☐

- Kegunaan bentuk kata kerja yang menyatakan waktu. → ☐



- [illegible]

- Sebagai seorang penterjemah, bagaimanakah anda mengatasi masalah dan kesusahan yang anda hadapi dalam soalan 23 diatas?

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins or other markings visible.

25. Does your completed translation fulfill the following criteria: Please tick (/) the relevant criteria that are fulfilled.

Adakah terjemahan anda yang telah siap memenuhi kriteria yang tersebut dibawah. Tolong (/) kriteria yang dipenuhi.

a. You have interpreted the source text correctly and accurately.

Anda telah menginterpretasikan teks asal secara betul dan tepat. → ☐

b. The language has been kept simple and reflects the style of the original text.

Bahasa yang digunakan mudah dan mencerminkan gaya teks asal. → ☐

c. There is correct and accurate equivalent use of terminology.

Istilah yang digunakan betul dan tepat. → ☐

d. The terminology used is consistent throughout and there is no confusion in the use of terms (the same term is used throughout the text to refer to the same thing for example the term 'ileum of the intestine' if translated in the Malay language as 'ileum' has to remain the same throughout the whole text.

Istilah yang digunakan harus konsisten dikeseluruhan teks and harus tidak ada huru-hara dalam kegunaan istilah (istilah yang sama harus digunakan diseluruh teks untuk merujuk kepada benda yang sama misalannya istilah "ileum of the intestine" kalau diterjemahkan sebagai "ileum usus" harus kekal kesamaannya dikeseluruhan teks. → ☐

e. The text is not translated literally but logically and it makes sense to the target readers.

Teks tidak diterjemahkan secara terus, perkataan demi perkataan tetapi secara logikdan memberi makna kepada pembaca sasaran. → ☐

f. The translation is accurate and based on the context of the situation.

Terjemahan adalah tepat dan berasaskan konteks situasi. → ☐

g. The content of the text is emphasized.

Isi atau kandungan teks dipentingkan. → ☐

h. The discourse and style of the original language is maintained.

Wacana dan gaya bahasa asal dikekalkan. → ☐

i. The translation reads like an original and can be completely understood by the target readers.

Terjemahan apabila siap, boleh dibaca seperti yang asal dan dapat difahami secara menyeluruh oleh pembaca sasaran. → ☐

- j. All "form defects" such as ill-written texts in the original are set aright or edited in the process of translation so as to allow more readable target language renderings.

Semua kesilapan bentuk dalam penulisan teks asal yang mengelirukan diperbetulkan semasa proses penterjemahan supaya pembaca sasaran dapat memahaminya dan membaca dengan senang. → ☐

Please count the number of ticks (from a to j) for question 24 to assess your translation.

Tolong kira bilangan tik (dari a - j) dalam soalan 24 untuk menilai penterjemahan anda.

Very good/Sangat baik	- all 10 criteria fulfilled.	→	<input type="checkbox"/>
Good/Baik	- only 7-9 criteria fulfilled.	→	<input type="checkbox"/>
Average/Sederhana	- only 5-6 criteria fulfilled.	→	<input type="checkbox"/>
Bad/ Tidak Baik	- only 2-4 criteria fulfilled.	→	<input type="checkbox"/>
Poor/ Lemah	- only 1 criteria fulfilled.	→	<input type="checkbox"/>

VI. PAYMENT FOR TRANSLATION/ PEMBAYARAN BAGI PENTERJEMAHAN

26. Are you paid according to word, page or whole text?

Adakah anda dibayar mengikut perkataan, mukasurat atau seluruh teks?

Word/perkataan ☐ Page/mukasurat ☐ Whole text/seluruh teks ☐

27. How much are you paid according to word, page or whole text?

Berapakah anda dibayar mengikut perkataan, mukasurat atau seluruh teks?

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28. Are you happy with the payment received?

Adakah anda puas hati dengan pembayaran yang diterima?

YES/YA ☐ NO/TIDAK ☐

29. Are you given royalty (for example a 10 per cent of the price of the book on all copies sold) for the translated books that are published and sold?

Adakah anda dibayar royalti (misalnya 10 peratus daripada harga buku untuk semua naskhah yang dijual) untuk semua buku yang telah diterjemahkan oleh anda dan berjaya diterbitkan dan dijual?

YES/YA ☐ NO/TIDAK ☐

30. If no, do you think that the payment of royalty will be an incentive for translators to go on translating?

Jika tidak, adakah pada pendapat anda, pembayaran royalti boleh jadi satu insentif kepada penterjemah untuk terus menterjemah?

YES/YA ☐

NO /TIDAK ☐

31. Is there any delay in the payment for a translation?

Adakah terdapat kelewatan dalam pembayaran bagi satu-satu penterjemahan?

YES/YA ☐

NO/TIDAK ☐

32. If yes, how long was the duration of the delay from the day ITNM promised to pay you to the day you actually received the payment?

Jika ya, berapa lamakah kelewatan dari hari dimana ITNM telah berjanji untuk membayar anda, kehari dimana anda menerima bayaran tersebut?

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33. Did the delay put you off from translating?

Adakah kelewatan itu membuat anda jemu untuk terus menterjemah?

YES/YA ☐

NO/TIDAK ☐

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APPENDIX E

INTERVIEW QUESTIONS

1. Where did you do your training as a translator?
2. Did you learn all about the theories and processes of translation?
3. Do you consider yourself a subject and language specialist?
4. How many Science books have you translated? Please name them.
5. How long did it take you to translate a science textbook?
6. How many years have you been translating Science texts from English into Malay?
7. Have you been acknowledged in the translated text? If yes, how?
8. How did you go about translating the text? Could you please let me know the processes?
9. How long does it take you to translate a page?
10. What are the materials that you need with you in order to translate?
11. Was there anything that you needed but did not have with you in your translation process?
12. Are you given deadlines to complete your translation? Was there any delay in your translation? If so, what was the cause?
13. Who published your book?
14. How were you paid? Were you happy with the payment? Are you getting royalty for the sale of the translated version?
15. What were the problems and difficulties you faced when translating?
16. Was it done on a part-time or full-time basis?
17. How did you overcome the problems and difficulties?
- 18.. In your opinion, was your translation perfect?
19. Was there any editing done on your translation? If yes, who did it?
20. Up till now, how many of your translated books have been published?
21. What are your recommendations through experience for good and speedy translation of Science and Technology texts?
22. As a conclusion, would you like to say anything else on the field of translation?

APPENDIX F 1

INTERVIEW ONE: The following is an interview between the researcher and Dr. Mohd. Sofian, a lecturer at the Department of Zoology, Universiti Malaya, recorded on the 21st of April 1998 at 10.00 a.m. at the Recording Studio in the Faculty of Languages and Linguistics.

Abbreviations used for transcription of interview :

R = RESEARCHER

S = DR. SOFIAN

R: Good morning Dr. Sofian. Thank you for coming. Today we are going to discuss about the problems and difficulties in translating Science and Technology books and materials from English into Malay. So, I'll start with the first question. Where did you do your training as a translator?

S: Actually, I didn't attend any course or training as a translator but I did it on my own through experience. So, I did try to attend several courses run by Dewan Bahasa but twice I tried but I never managed to get a place. So, after that I just gave up. I didn't try, I just gave up.

R: You gave up.

S: Yes.

R: So, from whom did you learn about the theories and processes of translation?

S: I never learnt anything but both the books I translated, I combined with somebody else. My friends who had proper training in Dewan Bahasa translated part of the book and I translated part of it.

R: So your friend was a trained translator.

S: Yes, he was a trained translator. In fact, he some sort of teaches in Dewan Bahasa for the Translation class.

R: So, now do you consider yourself a subject specialist in this case zoology and language specialist, that is, you consider yourself very good in English and Bahasa Malaysia.

S: Well, I'm not really a specialist but I can translate, but normally I prefer to translate a book that is closer to my field, my own field and so that means, I can understand much better. I'm not a language specialist.

R: Okay, but you can understand the subject matter.

S: Yes.

R: That's important in Translation. Well, now how many books have you translated and could you please name them?

S: I have translated 3 already, one is "Toksikologi Insektisid" by Fomio Matsumura, is about 500 pages, the other one is "Outline of Fractures", is about 300 pages and these 2 books have already been published by Dewan Bahasa dan Pustaka (DBP).

R: Already published.

S: Yes, already published but the other one.

R: The 3rd one.

S: Yes, the 3rd one, I've forgotten the name but if I'm not mistaken it is on "Neurophysiology." I can't remember the authors but that one until now no news about it.

R: But have you given them the translated version.

S: Yes, but that one, we combined 3 of us because they wanted it fast but that one they didn't pay yet because last time DB had the 'peruntukan' the budget for it but after that I think they stopped.

R: Oh, I see.

S: All the translation work, they give it to the university, but the university didn't do it.

R: Oh, I see.

S: That's the last one.

R: And when did you complete it?

S: End of '96.

R: End of '96.

S: Yes.

R: Now, it's '98 and still no news.

S: Yes, no news.

R: It's not in the market.

S: No, only 2 are in the market, in '95 and '96.

R: So, were all these 3 translated books combined with a partner.

S: Yes, I never did any single book on my own.

R: Never on your own.

S: Normally I combined, because you see if you were to do it on your own, it would take a long time. So, if you combine it's much faster. Just divide the book equally. Normally, after getting the books we discuss among the other partners, 2 or 3 of us, then we see which chapters we can translate the best.

R: Oh, I see depending on the chapters.

S: Yes, depending on the chapters. Yes, after that we divided equally and then we start translating, that way is much faster.

R: And finally, then you combine.

S: Yes, then we combine.

R: So, roughly how long did it take you to translate a book.

S: Umm..... normally it's about 1 to 2 years.

R: 1 to 2 years.

S: Yes, depending on the thickness of the books.

R: So what about "Toksikologi Insektisid?"

S: This one I took about 2 years.

R: 2 years.

S: Yes.

R: And the 'Outline of Fractures.'

S: This one faster, about 1 year.

R: 1 year and "Neurophysiology?"

S: This one is even faster because we divide the book among 3 of us.

R: 3

S: That one is less than 1 year, about 7 to 8 months.

R: That's fast, okay.

S: Yes.

R: So, how many years have you been translating Science and Technology texts from English into Malay?

S: Eh.....but now I didn't do anything but I think that about 3 to 4 years already.

R: 3 to 4 years back.

S: Yes, but lately I didn't do any translation because all my translations I do with DBP and I never try other companies.

R: Did you try with the Malaysian Institute of Translation.

S: No, I didn't. Probably, they won't allow me also because I have got no certificate.

R: The 2 books were published by Dewan Bahasa (DB).

S: Yes.

R: The third one.

S: The third one is also by DB but they are withholding.

R: Have you been acknowledged in the translated text?

S: Yes.

R: Yes, how?

S: Normally, they will put the name of the translator on the cover, so both my books had my name on the cover.

R: On the cover. Did they write a biography of you on the back page?

S: So far no.

R: So you were only acknowledged on the cover.

S: Only on the cover, nothing else.

R: Nothing about your qualifications and experience.

S: Yes, nothing.

R: Would you feel happier if they had done a write-up, about a paragraph about yourself.

S: Yes, it's much better. At least if they write a paragraph, people can read and can know exactly that this is his field.

R: Maybe the next time, we could suggest this to DB. It's a good idea.

S: Yes. I'm not sure if Dewan is going to do it again. I'm not sure.

R: Maybe we could suggest it to them.

S: Yes.

R: Now, how did you go about translating the text. Could you please let me know the processes?

S: Um.....This is just through my experience. Normally the DB, since I did both my books with them will contact us whether we want to translate the book or not and then they will give us a list of books that they want us to translate, so normally I try to choose a book on my field or closer, then, normally, I will read the whole, roughly the whole book and then before you start and if I translate it alone then I will do it straight. Normally, I will choose the easiest one - the easiest chapter but if we translate with somebody else, we just discuss and divide which part you want to translate and which part I want to translate and then after that, I normally read the chapter I choose the simplest one and normally when I read, I read the whole paragraph and the whole sentence first. I do not translate word for word. I just read the whole sentence and then I use my own words to translate and because sometimes when you read word by word you miss the.....

R: the meaning

S: Yes, the meaning is important.

R: So you translate paragraph by paragraph.

S: Yes, paragraph by paragraph. Normally, I translate the text first, figures and diagrams, I do it later.

R: Oh, I see.

S: Legends of the figures and so on I do it later. Yes, I think that's about it.

R: So how long does it take you to translate a page, a page meaning about 250 words?

S: Sometimes, it depends. This is not full-time. It is part-time. Sometimes, it can take 3 to 4 hours one page, sometimes it can be half a day. It depends, some pages are quite difficult, some words you can't get in the terminology book, in the dictionary, then you find it a problem and you put it aside. But on the average, it's about 3 to 4 hours.

R: 3 to 4 hours.

S: Yes, depends on the difficulty of the subject.

R: So what are the materials you need with you when you translate?

S: Normally, when I do the translation, I must have the English-Malay dictionary, I must have all the terminology books by DB.

R: You mean they have the Science terminology books.

S: Yes, they have the books. Normally it's Biology and some other subjects related like medical, Chemistry and other things. The other things I need are only a pen and I translate straight away. Sometimes I do it straight into the computer.

R: Into the computer.

S: Yes. Into the computer and I save it. Next time, I come again and can continue the whole process.

R: So DB supplies the terminology books.

S: No, no, I bought it from the shop.

R: Who published your books?

S: All my books were published by Dewan Bahasa and Pustaka because they are the ones who asked me to translate.

R: Now, how were you paid?

S: Last time they paid a range from 6 to 10 sen per word so actually whether they pay you 6, 7 or 8 sen is based on the quality of your translation. Normally, if you are just a beginner, they give you 6 sen per word. But after some time, they give you 8 sen. But people who are experts like my friend, normally get 10 sen per word. It all depends on the quality of the thing.

R: So if you are sharing with your friends, then the payment will be according to the Chapters you translated.

S: Yeah. Normally, they will count the number of words you translated but not exactly, normally approximately one page have many words and then they multiply so that means word by word.

R: Okay. Were you happy with the payment. In your case, 7 to 10 sen per page.

S: Yeah. I'm quite happy with the payment. The only thing is how they judge you. That is whether they want to pay 6, 7 or 8 sen per word and you don't have a say.

R: Who does the editing?

S: The editing is done by somebody else. I'm not sure. Probably, someone else in DB or someone outside.

R: Are you informed about the quality of your translation once they have received it.

S: No, we are not informed. Suddenly you see your book in the market. They don't even give you a copy also.

R: Oh, I see, they don't even give you a copy.

S: That's why I am surprised.

R: It's not fair.

S: Yes, it's not fair.

R: By right, they should give you a copy.

S: Yes, they should. When the students buy it from the market, only then do I know that it is available.

R: As a token of appreciation they should give you a copy.

S: Yes, they should.

R: Are you getting royalty for the sale of the translated version.

S: No royalties. In a way I'm not sure whether its good or not. Sometimes this higher education books, it's quite difficult to sell, so like this book "Toksikologi Insektisid" the majority of it is used by my students. I have about 50 students and not everybody buys. So if base on royalty, I don't know how much they're going to pay but the 7, 8 sen per word they pay is enough, I'm still not sure. But, normally, one book if I combine I get about RM3,000 to RM4,000.

R: That's it.

S: Yes, that's it. No royalty at all.

R: But did you ask for royalty.

S: No, because higher education books are hard to sell. This primary and secondary books, that's quite easy to sell so royalty is not much.

R: Would you be happier if royalty were mentioned.

S: Yeah, it's okay.

R: Yeah, it will be a plus point, an incentive for translators to go on translating, because they have put so much effort and for their life long they can earn a few hundreds of ringgit.

S: Yes.

R: This is the most important question that is 'What are the problems and difficulties you faced when translating?'

S: Yeah. Sometimes, I find some words or terms I cannot translate it. It's neither in the dictionary nor in the terminology list. Then, you've got to coin your own terms and whether the word can be accepted or not, we're not sure. And another thing sometimes the word that Dewan Bahasa gives - the terminology that DB has given - probably the word is correct but the meaning and sound is far away from the original. I give an example, for example "MORTALITY" - the translated version is "KEMORTALAN" - is totally different in terms of spelling, in terms of sound so if I talk with the foreigner especially to the English speaking people and I say

"KEMORTALAN" he totally doesn't know the term. I use the term "MORTALITI" at least the spelling is different but the sound is the same so they can understand and then the worst thing I translated this book - medical books is worse because of the words. I give an example "OSTEODYSTROPHY" all these medical terms, sometimes they don't have in the terminologies. So I found it is very difficult so probably this is the last time I would translate such books. I prefer to translate books on my own field. I'm really familiar with it.

R: So, in case the word that you need is not found in your English-Malay dictionary and also the list of terminology given by DBP, and you decide to coin your own word, do you make sure that the sound is the same and the spelling is also the same?

S: Normally I try to put it, the sound is the same. Example "NATALITY" so I put "NATALITI" where the spelling is in Malay. Normally, I'll refer with my friend, Dr. Mustaffa Ali because he's the one who teaches in DB, so he also suggests the same thing to me. He said if its not there just use the one because you cannot use the English word. At least, the sound is the same, the spelling is a bit different.

R: These words that are not found in the English-Malay dictionary and the list of terminology given by DB, do you inform them of the coinage of these words.

S: Yes, we inform them.

R: That's good. Was it done on a part-time or full-time basis?

S: Part-time basis. I always do it on a part-time basis. There are some people doing it full-time but because I do it part-time, it takes a longer time.

R: It's true. Now, how did you overcome the problems and difficulties?

S: First thing like I told you I ask the expert or friends familiar with the thing and then I try to use an English-Malay dictionary, if not in one dictionary, go and find another dictionary and then I try to use a closer word whose meaning is closer but use another word. That's how I do it.

R: In your opinion, was your translation perfect?

S: Well, I mean so far I've translated 3 books but I found that the "Toksikologi Insektisid" is good because I translated it, its my own field and then my students are using it and there are no complaints about it and they can understand the thing but I'm not sure about the "Outline of Fractures."

R: It's a medical book.

S: Yes, it's a medical book because I'm not sure because I have no students of mine using it. Probably, medical students after using it can provide the feedback to DBP whether they prefer the translated version or the original text. I'm sure the translation is not perfect but if the students whose English is not too good may understand it.

R: It's good news that your translated book "Toksikologi Insektisid" was understood by your students.

S: Yes.

R: Was there any editing done on your translation. If yes, who did it?

S: Actually yes. Normally, after we translated everything, we send it back to them and then it takes some time before it can be published because the editor and sometimes the editor takes a long time to edit it. That's why the publishing is delayed but so far DB has never told us who are their editors but I heard that it's somebody else from other universities but in my own field became the editors for my book.

R: After publishing, say your book on "Toksikologi Insektisid" was there any place where the meaning became ambiguous due to editing.

S: Sometimes, yes, especially like sometimes the editor is not familiar with the subject matter. Let's say, "insektisid" where we get a lot of names for "insektisid" where we should maintain the spelling for example "Marathyon", "Parathyon" etc. but sometimes the editor says we should use the Malay term but I said, "NO" when we are dealing with the poisons. Otherwise people will not know and think it is something else and thus becomes dangerous but DBP also wants to maintain the original spelling like "Malathyon". becomes "Malataiyon" and "Dichlor" becomes "Diklo", but actually the sound is still the same but the spelling is a bit different so that kind of thing sometimes I am not quite agree.

R: So, this editing should be done by someone who is a subject specialist.

S: Yes.

R: If not, while thinking about the language, the editor might just deviate from the subject. So up till now how many of your translated books have been published?

S: Up till now only 2 out of 3.

R: 2 out of 3.

S: Yes, because I did not do full time but Dr. Mustaffa did more than that because he just joined the university as a lecturer. Before that, he was a tutor, he had full time. So I got 2 out 3 published only.

R: Let's take the example of the book "Toksikologi Insektisid." From the day you sent it to be published to the day you saw it in the market, how long did it take?

S: I think it was about 3 years.

R: 3 years later.

S: '93 I translated and '95 only it was published.

R: It took 2 years.

S: I asked them what happened and they said that the editor took a long time.

R: That's why it was late.

- S: Because I was looking for this book because I wanted to use it for my lectures. So, when I asked what happened they said because of the editor.
- R: 2 years is a very long time in the field of Science and Technology knowing the explosion of knowledge in the field of Science and Technology. Do you think that so much more information could have been added to the book "Toksikologi Insektisid."
- S: This is already the 3rd edition.
- R: The original book was published in which year?
- S: 1985 and this is the 2nd edition. For example this book "Outline of Fractures" is the 9th edition and when they gave me to translate it's the 8th edition. Half-way through, the 9th edition was out and they gave me the 9th edition to add to the 8th edition.
- R: In your case, it was the '85 book and 2nd edition and when you translated it, it was '95 and there was a new edition already.
- S: Yes, that was the new edition. I was doing the old one and half-way through the new edition came out and I was given the new edition to translate.
- R: So you had to add some new information.
- S: Yes.
- R: What are your recommendations for good and speedy translation of Science and Technical texts?
- S: First, you must attend a proper course - you must know the theory and how to go about translating. Second, you must try to translate the books related to your own field so that you can understand better and then at least the meaning is still there and then the best is you do it full-time but I'm not sure then if you can just live on Translation because the Translation process is a bit slow now.
- R: Yes, it's true.
- S: It's much easier to read the original text. So, you must attend proper courses, choose the book closer to your field and then do it full-time.
- R: What about on the side of the publishers, do you have any recommendations. They are a bit slow.
- S: I think if you want it fast, don't do it with Dewan Bahasa because DB is sometimes a bit slow. You can do it with some other publishers like Oxford Publications but if you do it with the private company they want it fast, that means the deadline due is even shorter, so you can do it fast also, so if you do it full-time, I think you should do with the private company, if you do it part-time, the DB is the best.
- R: As a conclusion, would you like to say anything else in the field of translation of books on Science and Technology.

S: Like I said earlier, I feel that some of the terminology used by DB is correct but the sound is not correct and sometimes when you want to write the whole sentence, the sentence becomes longer and longer. I give you the example like "mortality" becomes "kemortalan" and then "oxidation" - last time was "oxidasi" and now it is "pengoksidasian", it is totally different from the original. So sometimes, you use 'cyanide', it becomes "sianida" sounds totally different, so if you talk with the foreigner especially the English-speaking people, they'll say what is "sianida". If you use Malay spelling and pronounce it but now the spelling and sound is also different.

R: very much different.

S: and then the sentence becomes longer.

R: I think they are fond of using *penambahan* which does not exist in English.

S: Yes, sometimes the *penambahan* has become fantastic you know.

R: Yes, it makes the word longer.

S: Especially the chemical name and so on example "penghidrosian" is "hydrolysisation" so the word is totally different and it becomes longer so I think it's good if you maintain the sound at least but different spelling. So okay that's it.

R: Do you think that DBP is facing a dilemma in promoting Bahasa Malaysia because they feel it's no use using English words but one should use Malay words to show originality so they start putting in all the *penambahan* and so on to make it sound more Malay.

S: I'm sure that when they discuss about this terminology they've got all the committees from the various Higher Learning Institutions. I think that's the best that they've got and I'm sure they also have people who are expert in the language must be there so that even if you're translating you must be correct in terms of language but sometimes, I find it difficult when I ask the student to read this one because sometimes when they read they cannot understand certain words and then they come to ask you the meaning of the words and then they say, "Oh, it's that word". I'm sure DB also faces the dilemma.

R: Yes, it's true.

S: And to do this the translator's work is not that easy, you get to give people to translate and give it to the editor to edit and at the end of the day you cannot sell the book because this is a Higher Institution book and not many people buy it.

R: The market is so limited.

S: Yes, the market is so limited. But they are given the job to do it and they have to do it because all the money came from the government. They've got to do it because it's part of their service unless it's the company like Fajar Publishers and of course they want to sell the book and so normally they go for the secondary books - that's where the market is.

R: Now, coming to the practical level, where the students are doing reference work

and sitting for exams. Now there are limited materials in Malay for Science and Technology so students have no choice but to keep on reading English materials.

S: Yes.

R: Now, what about your lectures. Are you conducting them in Bahasa Malaysia?

S: Actually, my lectures are conducted in both languages. Sometimes, I use Malay and sometimes I use English but sometimes for the Malay terminology, I use English and I find students can understand better as they also read English materials in the library and Internet, so they can understand. I think at this time it's good that you use both languages. If you use only one language, some students find it difficult to understand especially the non-Malay students because they find it difficult to understand the Malay terminology so I use both languages. If I use only one language, some students find it difficult to understand especially the non-Malay students because they find it difficult to understand the Malay terminology, so I use both languages.

R: You use both languages, but what about the exam? Are they supposed to answer in English or Malay?

S: Exam, they can answer in Malay but if they can't get the Malay term, they are allowed to use the English term.

R: But they are supposed to answer in Malay.

S: Yes, they are supposed to answer in Malay.

R: What about writing the thesis?

S: Theses- they can write in both languages. Normally, the undergraduates write in Malay. So far, the majority of the students doing Biology, write in Malay but for Master's and Ph. D, you can write in Malay or English but normally so far all are written in English.

R: Another important point where Science and Technology is concerned is acronyms, formulas etc. How do you go about translating them?

S: Formulas, acronyms, symbols no change because they are international terms.

R: Internationally accepted so no change. No Malay coinage for acronyms etc.

S: No. All of these symbols must be understood world-wide. English O is oxygen, H is Hydrogen, H₂O is water.

R: So, the acronyms H₂O is water or air.

S: Yes. In Malay, it is still H₂O but Hydrogen Oxide and it is *air* that is water.

R: I hope no one will change this aspect.

S: No, if they change, we will fight because this is understood world-wide.

R: Internationally intelligible.

S: Yes.

R: That point is good because I did hear and through my reading came to know of some translators who wanted a change in acronyms to adhere to their Malay equivalents.

S: No, no change. For this one "phosphate", spelling is Malay "*Fosfate*", spelling is different but sound is the same. This I agree. This is an enzyme so still the same. But some they become really far away from the original. But the scientific name we maintain like name of the insect for e.g. "cockroach" remains the same. You cannot translate, you cannot change but this is internationally accepted.

R: That's it. Do you have anything to add.

S: No.

R: Thank you so much for the interview, Dr. Sofian.

Note: The books translated by Dr. Mohd. Sofian are as follows:

1. *Toksikologi Insektisid* by Fomio Matsumura and translated by Mohd. Sofian Azirun and Zainudin Shafii in 1995. (about 500 pages, published by Dewan Bahasa dan Pustaka).
2. *Outline of Fractures* by Churchill Livingstone and J. Crawford Adams and translated by Mohd. Sofian and friends (about 300 pages – to be published by DBP)
3. *Neurophysiology* - translated by Mohd. Sofian and 2 others, translated within 18 months but not yet published.

APPENDIX F 2

INTERVIEW TWO: The following is an interview between the researcher and Dr. Mustafa Ali Mohd. from the Department of Pharmacology, Faculty of Medicine, University of Malaya on the 12th of May 1998 at 6.25 p.m. in his office .

Abbreviations used for interview:

R = RESEARCHER

M = DR. MUSTAFA

R: Good evening, Dr. Mustafa. Thank you so much for letting me interview you. We'll start with the first question that is "Where did you do your training as a translator?"

M: Actually my training is from the Dewan Bahasa, that is through a Diploma course 10 years ago where they have a programme where we go there for 6 months every weekend on Saturday and then we have about a 3-hour session every week and then at the end of the 6 months we have an examination and that is how we are assessed and the course is comprised of lectures which cover techniques of translation , some language, some practical aspects where for every session, we have some practical assignments to do and submit.

R: So did you learn all about the theories and processes of translation.

M: I think I have learnt quite a lot, maybe it's not complete but it's quite a lot but the basic things are there. I do not know if I got detailed information but the basics are there.

R: Were there any specific theories for translating Science and Technology texts from English into Bahasa Malaysia?

M: Yes, for scientific words, yes, there is a special technique involved, theories also, that is theories and techniques together, for example, translating diagrams, flow charts, and also experiments. They are quite different from narration of novels from some story books because scientific translation is very specific and precise and words and terms are not only specific but exact.

R: Exact.

M: Yes, exact because one word can mean differently in Biology, it can mean differently in Physics, so you must be well understood.

R: Within the context.

M: Yes, within the context itself. You cannot be very vague so if you were to translate scientific texts in Biology, the basic requirement is that you must have a good background in Biology so that the theories in it can be well translated and reported.

R: Do you consider yourself a subject and language specialist?

M: For subject maybe, yes, but language specialist, I think I don't dare to commit myself because the Bahasa Malaysia language always keeps on changing, it changes every

second, so fast, so much so I don't know at this moment which is the correct term, that is the problem I face, because DB is changing the language at any time they feel, so fast, so much so that we feel left out and we feel outdated so as far as language is concerned, the basics are there but the trend, the way they change, I don't know whether I'm up-dated or not.

R: So coming to subject, which subject are you a specialist in?

M: For me, I think I can consider myself a specialist in all the Sciences because I have a background of all the sciences that is the basic disciplines.

R: Now, the next question. How many science books have you translated and please name them?

M: So far at least 20.

R: In a span of how many years?

M: About 10 years and some are textbooks - medical books, about 3 of them and are very thick, the rest are all small small books and some are commercial books varied from that range.

R: How long did it take you to translate a page of 250 words?

M: This is also relative, for a page of higher institution of learning book it takes 2 hours. When I was doing my Master's, I could translate a book in three weeks. It's all relative, depends on when I do it.

R: So, for how many years have you been translating Science texts from English into Malay?

M: I started in 1983.

R: That's more than 10 years. Have you been acknowledged in the translated text? If yes, how?

M: Some books I translated, I've not been acknowledged because I have been paid. Sometimes, for small commercial booklets I don't agree with what is written in texts, I don't believe what they're talking about but I am paid to translate what they have written and I don't want to be acknowledged but for textbooks, yes, I am acknowledged.

R: You mean it's written as translated by ... on the cover.

M: Yes.

R: Is a short biography written about you, say on the back cover.

M: No. That is also limited. If a book is translated by more than 4 people, only 3 people are acknowledged - the first 3, they count by the amount of work you do. If the book has a thousand pages and say 6 translators undertake the task, only 3 will be able to get in.

R: That's not fair.

M: Yes. But it's Dewan Bahasa's rule that only 3 will be acknowledged. Maybe it's not a rule, but only an idea, they don't want the names of the translators to clutter up the whole cover.

R: How do you go about translating the text? Could you please let me know the processes or steps?

M: I see. It depends on the type of book also. Some like advertisements, popular articles or pamphlets, I just translate it offhand, sometimes word by word and after that I edit. For tertiary texts, normally what I do for texts is I read the whole paragraph and then I translate word by word, having in mind the concept already.

R: Do you translate paragraph by paragraph or sentence by sentence?

M: What I do is I read sentence by sentence and then rewrite the Malay version. For scientific text, I translate sentence by sentence and then rewrite the Malay version. I translate sentence by sentence. I tried to do paragraph by paragraph, but it's too long.

R: By this process, is the meaning maintained.

M: Yes, the content is there. The meaning is very complex and I try to make it precise especially medical texts. If you translate paragraph by paragraph, you might miss a lot of information, so you need to do sentence by sentence but it is good if you can read the paragraph first. Yes, in a medical text, this is important.

R: How long does it take you to translate a page of about 250 words?

M: 250 words per page, it takes about 20 minutes.

R: That's fast.

M: This is typing, not writing. I type straight into the computer, normally if I concentrate fully, I can do it faster. Sometimes, when it's boring I turn on the radio for about a minute and then I type a bit. It varies. There are disturbances, sometimes I stop for a 1 to 2 minute breather.

R: What are the materials that you need with you in order to translate.

M: It depends on the book. If I translate a normal book, I don't need anything. I only check for the words later, so that's why I need a computer. I bold the words and check then later but if I do a scientific book for tertiary level, I need a dictionary and also a terminology book.

R: You mean the terminology book published by Dewan Bahasa.

M: Yes, that book is very essential because a lot of terminology which I don't know when it comes to terms, that slows down the process.

R: Are you given deadlines to complete your translation?

M: Yes. Normally DB will give. A company may come with the work in the afternoon and they want it the next day but they pay a lot. Overnight, I can earn around RM1,000.00.

R: Through your experience, was there any delay in your translation. If so, what was the cause?

M: Yes, there is a delay just like our plane. One thing I have other things to do, second, sometimes I translate with my colleagues because the book is thick, they are a bit slow, causing delay, sometimes after all have finished, we have a few terms to discuss and check because we can't come up with the exact translation of the terms and this causes delay.

R: Who published your books?

M: Depends on who asks me to translate. If DB asks they publish. If a private company asks, they publish.

R: How much were you paid?

M: Depends also, they pay in a lump sum. DB pays according to how well you translate depending on the editing part. If editors do more, then I get less. They work on an average of 10 sen per word. Normally, I get around 7 to 8 1/2 sen per word.

R: Were you happy with the payment?

M: You cannot expect too much. Yes.

R: Are you getting royalty for the sale of the translated versions?

M: I don't know because I've not been offered. No, because translated books don't do well in the market.

R: What were the problems and difficulties you faced when translating?

M: I think I enjoy doing it and so far no problems because I concentrate on it. There is no hindrance as I enjoy doing it.

R: Was it done on a part-time or full-time basis?

M: It depends sometimes. When I was doing my Master's, I did it full-time. I earned more than now, also depends on the length. Now, I do it part-time, payment was good. At the present moment with the economic slowdown, there is no work.

R: How did you overcome the problems and difficulties?

M: There are no problems in translation. You only need concentration.

R: What about diagrams and charts?

M: There is a system depending on which publisher you are working with. With DB, you photostat that particular page and label it in Malay whereas for other publishers you just list the pages and their translations, just list down the terms in Malay.

R: What about the formulas, acronyms, short forms etc. Is there a change?

M: Formulas, acronyms all remain the same.

R: That means H₂O is water that is *air*.

M: Yes, these are Latin names and they do not change. In fact it is different from English for example sodium in English is called Natrium in Latin and in Malay is also Natrium. Abbreviations are different, they are translated for example etc. in English is *dan sebagainya* and *dan lain-lain*. Page is *mukasurat* and for titles of authors if it is Abu and Ahmad it becomes *Abu dan Ahmad*.

R: In your opinion, was your translation perfect?

M: No, I don't think it's perfect because my command of language that is Bahasa Malaysia is not very good but maybe my translation technique is good, thus there are gaps there.

R: Was there any editing done on your translation? If yes, who did it?

M: Some are DB editors, some are professional editors, company editors from commercial companies. Commercial companies are not so concerned with language, they are more concerned with subject matter and effect because it's their style but not everybody does that.

R: Up till now, how many of your translated books have been published?

M: 5 and another one is waiting to be published as the publishers can't get the copyright but they will pay me first.

R: Through your experience, what are your recommendations for good and speedy translation of science and technology texts?

M: I think translation should be given to people who are expert in their field and the editors chosen should also be expert in that field.

R: Sometimes the editors while trying to perfect the language, might change the subject matter and make it worse.

M: Right, translators if you don't know the field definitely you cannot understand the subject matter. Another thing try not to have too many translators for one book.

R: From the time you send in your translated version to the time you see your book in the market, how long does it take?

M: Depends, for DB maybe 3 to 4 years later. It can be very much longer because you need to send it to the editors, then the printing process especially for tertiary books. For

companies, it's much faster, they print it the next day because they want their profits back.

R: Within the 4 years of the book being translated, there is so much added knowledge so much so that it becomes out-dated by the time it is in the market.

M: Yes. It is out-dated.

R: Like you said you took one year to translate and it took 6 years to be published. It's out-dated.

M: Our translation is fast, say 1,600 pages, it takes 6 translators and the process involved in publishing is very long and this is normal.

R: Is DB the pushing factor?

M: They have problems - in-house problems, that is, they don't have enough artists, printers, lay-out people, there are so many books to be printed. If a book has 1,000 pages, if you have 3 of such books, it will take a long time to be published.

R: Knowing that DB is the main body responsible for translating books on science and technology and they take such a long time to publish these books, there is thus a shortage of books on science and technology in Bahasa Malaysia to be used as reference by the students in Institutions of Higher Learning.

M: Yes, lots of students complain about this. They don't have enough reference books and the translated versions are also not very perfect.

R: So is Dr. Mahathir's vision 2020 going to be fulfilled? I think he has thus allowed this flexibility of letting science and technology be taught in English in Institutions of Higher Learning. Could you tell me the scenario presently at University of Malaya.

M: We should use English wherever possible but if you have the Malay books go ahead but don't stop, use English whenever you can - you must proceed. The copyright - asking permission takes time. It should run parallel. Go to English if you have to, go to Bahasa Malaysia if you have to. It should go together, then only we can develop.

R: I think the problems will be with the first year students. They will have a sudden switch and be faced with different terminology and lectures will be given in English. All this while they have been learning science and technology in English and then a sudden switch. How do you overcome this problem?

M: The problem is not the language. I think the students have no problems with the language except the terms. The terms used by lecturers are different from the terms used by the teachers. The terms used by the school is different from the terms used by the university and so after 3 phases of changes, they are confused. They cannot identify which is which.

R: So what about now. Are the lectures delivered in English or Malay?

M: As for us, the 2nd year and above, the lectures are in English. I don't know about the 1st year but I think is compulsory in Bahasa Malaysia. 1st year all in Bahasa Malaysia and 2nd year onwards, all in English.

R: Students in secondary schools are complaining. The translated versions for science and Maths are ambiguous and sometimes they cannot solve the problems because the language is vague.

M: That is damaging. Instead of getting the English version nicely into the Malay version and the Malay version is not written nicely, that is the reason you cannot make progress that way. You should not go for numbers. What they are doing now is going for numbers. Some lecturers give their students to translate the books - RM10.00 per page and the students who don't have any training in translation, do it badly. And because the lecturers are pressurised, they want to do it fast. During the mid-80's, DB paid well and many people entered into translation. Some even left their jobs to be full-time translators and later suffered because they were not paid promptly. The situation is very bad now and DB has stopped publishing books because of the economic slowdown.

R: As a conclusion, would you like to say anything in the field of translation?

M: People should try to translate more and they should be paid very well. They should have started this long ago. Editors must be prepared now. All my lectures and references are in CD and in the Internet. Today everything is on Internet. We don't want the same situation again. We should have the spell-checker. Nowadays, we can't be carrying books around as they are too heavy. We have to start planning software now which can be used by all translators in Malaysia. They have to plan software at the terminology level. Even when teaching translation, they are still using the manual way. They are so afraid of technology. They are worried about technology. Maybe they should use the electronic media. Even I use the computer for my lectures. Even the Russians are able to send a rocket to space and we haven't achieved that.

R: I understand that you are in the Evaluation Committee of DBP. Could you elaborate your role and how evaluation is done?

M: Yes, it is done after publication.

R: Shouldn't it be done before publication?

M: It should be but in practice it is done after publication. Evaluation also takes into account the cost of production, cost of publishing book- is it worth or not? If it is not worth, the students will not buy it.

R: If translated books are vague and ambiguous, is there anything done to rectify this for example sending a correction supplementary paper explaining the vagueness, inaccuracy etc. to schools.

M: No, nothing.

R: It's just left like this.

M: Yes. Once the book is published, it's published.

R: An imperfectly translated, published book.

M: Yes, unless they want to do another edition.

R: Do they do it?

M: No, this is very rarely done. They can't finish selling the old, original stock, so an addition is rarely done, because they put 3,000 copies or at least 1,000. It's very rare for them to print another edition.

R: It's true.

M: Very few copies are sold and the rest is put in the store-room. That is the problem, they cannot make profit and because they cannot make profit, they cannot make much improvements. So, on their side, there are a lot of problems. But the fault lies with them and at the beginning, if the book is good, of course, people will buy. They have to evaluate the cost of production and the amount the student has to pay to buy the book. People don't trust any translated book except if it comes from a trusted company.

R: So, the problem lies not in the secondary schools but in institutions of Higher Learning. If a lecturer translates a book, he recommends it to his students who will buy it. If, in the following year, he changes department or is transferred, the new lecturer may not use that particular book.

M: Actually the tertiary texts, the lecturers don't recommend. The students always don't buy texts like that because you don't use the whole book for the lectures. In science, it's always like that, you only use one or two chapters. In medical, it's different, if you buy one book you use the whole book. But, medical books, not many are translated. The English version is at least RM50.00 for each book. The students use it for the whole year and thus they buy it.

R: Then, it's worth buying it.

M: Yes, it's worth buying. We give them about 4 titles, you choose 1. So, they buy 1 is enough for the whole year. They use it from cover to cover. Therefore, it is worth it because they have only 4 subjects in year one and 4 subjects in year 4. Therefore, you buy only 4 books a year, that's all, but these books are really utilized. When they go to the 3rd year, they just sell the 2nd year students but unfortunately, the medical texts last only for 2 years. They don't last for more than that, they will be upgraded. They will always change. There are not many, only 2 or 3 texts for reference. Some subject, you have 4. It's very simple but in science, this is very different.

R: Dr. Mustafa, thank you very much.

M: I'll post you the list of my translated books.

R: Thanks.

List of translated books by Dr. Mustafa Ali Mohd.

1. *Biokimia Otak*. (1989). Bachelard. Dewan Bahasa dan Pustaka.
2. *Review of Medical Microbiology*. (1992). Jawetz. Dewan Bahasa dan Pustaka (in publication).
3. *Review of Medical Physiology*. 1994. W.F. Ganong. Dewan Bahasa dan Pustaka.
4. *Nota Kuliah Ginekologi*. 1990. Josephine Barnes. Dewan Bahasa dan Pustaka.
5. *Fundamentals of Fixed Prosthodontics*. 1990. Shillingburg, Hobo and Whitsett. Dewan Bahasa dan Pustaka.
6. *Gynaecology. Ten Teachers*. Dewan Bahasa dan Pustaka. (in publication).
7. *Basic and Clinical Pharmacology*. B.G. Katzung. Dewan Bahasa dan Pustaka. (in publication).
8. *Outlines of Fractures*. Dewan Bahasa dan Pustaka. (in publication).
9. *Mikrobiologi Asas dengan Penggunaan*. 1989. Thomas, Katherin and David. Dewan Bahasa dan Pustaka.
10. *Pemakanan Untuk Hidup*. 1990. Frederick J. Stare and Margaret McWilliams. Dewan Bahasa dan Pustaka Kuala Lumpur.
11. *Human Neurophysiology - A student text*. 1994. Olivier Holmes. Dewan Bahasa dan Pustaka. (in publication).

APPENDIX F 3

INTERVIEW THREE: Interview with Puan Ramlah (A pseudonym used as interviewee does not want to be identified), a PhD student at the Faculty of Science, University of Malaya. This interview was conducted on the 13th of May 1998 at 10.00 a.m. at the Recording Studio of the Faculty of Languages and Linguistics.

Abbreviations used for Interview:

I = INTERVIEWER (RESEARCHER)

R = RAMLAH

I: Good morning, Ramlah. Thank you for allowing me to interview you. I'll begin with question 1, "Where did you do your training as a translator?"

R: Good morning to you, Kulwindr. Thank you for inviting me. It's my pleasure to be here. I did my training at Institute Terjemahan Negara Malaysia which is located in Kuala Lumpur. I'm sure you've heard of it. It was an intensive 2-week course about 3 years ago.

I: So at the end of the 2-years of training, were you given a certificate?

R: It's actually 2 weeks.

I: 2 weeks, 2 weeks, yes, were you given a certificate?

R: Yes, we were given a certificate.

I: In translation.

R: Yes, in translation.

I: Did you learn all about the theories and processes of translation in the 2-week intensive course?

R: Yes, we did a brief - they touched on the subject as well as they gave us some practical work to do so we did but not fully like the full year course. It was a very short and concise course.

I: I'm sure they touched more on practical work.

R: Yes, more on practical work.

I: So, was it general translation or specific scientific translation?

R: We had both - we had people from the Arts as well as the Sciences to teach us, so we had a bit of each.

I: So what about coming on to scientific translation - were there any specific theories or techniques of translating Science and Technology materials let's say from English into Malay?

R: Not really, they didn't go into specifics because they were people from varied disciplines. So what they did was they touched on the general theory of translation, that's about it.

I: So do you consider yourself a subject and language specialist?

R: Well, not yet but I'm trying.

I: Okay, how many Science and technical books have you translated? Please name them.

R: Okay, about 4 or 5 and I can name a couple offhand for example, Communication Systems which I did for Fajar Bakti, Marconi and his Invention, also for Fajar Bakti and another book for Fajar Bakti itself, Aeroplanes.

I: So, how long did it take you to translate a book? Also, in your case how many pages were in a book?

R: It was a short book of about 50 pages, so they gave me a dateline of a month.

I: A month.

R: Yeah, a month to translate.

I: So were you able to complete it within a month.

R: Yes, except for 2 books which I had some problems because of my health so I extended for about a week.

I: So how many years have you been translating science texts from English into Malay?

R: From English into Malay, for about 2 years.

I: 2 years.

R: Yes, intensively.

I: Have you been acknowledged in the translated text. If yes, how?

R: Okay, yes in Fajar Bakti books normally they acknowledge the names of the translators on the inside of the cover.

I: Not on the outside.

R: Not outside, in the inside.

I: And do they write a short biography of you at the back.

R: Not that I know of.

I: So, no, just your name.

R: Yeah, just my name.

I: Translated by so and so.

R: Yes.

I: So how did you go about translating the text. Could you please let me know the steps? Given a book, how do you start?

R: Okay, first of all what I do is I'll check the terms from a few sources, one from the Book of Terminology by Dewan Bahasa. If I cannot get the terminology, I will check up with other translators as well as with Dewan Bahasa, they have a HOTLINE for the terms you cannot find in the books, so they will try to help you as much as they can. The second will be to read and understand the text.

I: The whole text and to read it first.

R: Yes, I would normally read the whole text, the whole book, for instance and then later on I will go from page to page, after reading the whole book.

I: So when it comes to translation, do you translate sentence by sentence, paragraph by paragraph or page by page.

R: After understanding the text, you can normally translate sentence by sentence.

I: Sentence by sentence.

R: But it's important to know the whole context first.

I : Okay, so when it comes to translating, your method is to translate sentence by sentence.

R: Em.....Yes.

I: How long does it take you to translate a page, a page here meaning 250 words.

R: Okay, depending on the material, if it's a simple children's book, a scientific basic book, it probably would take me about an hour.

I: Okay, that's fast.

R: But for the more heavier material, maybe 4 to 5 hours depending on the state of my mind actually, the time, you know.

I: Yes, so what are the materials that you need with you in order to translate?

R: The first thing is the English-Malay Dictionary and then the Malay-Malay Dictionary.

I: The Malay-Malay dictionary.....

R: Yes, the thesaurus and that kind of thing you know and also the book of terminology from Dewan Bahasa.

I: These 3 things. So, what is your method? Do you make a draft or type on straight into the computer?

R: Actually, now I do not have a computer. Those days when I had a computer, I used to type in straight. Now, I have to write it down and get someone to type it in for me.

I: Okay, was there anything that you needed but did not have with you in your translation process?

R: Okay, there were a number of things, hang on, my main problem was with the terminology. Sometimes, the terminology is not listed in the book of terminology by DBP, so what I have to do is contact people who are specialized in that field and ask them or what I can do is I have to contact Dewan Bahasa Hotline and get them to find out for me.

I: Okay, if they can't help you and it's not in their list, so, do you coin your own word.

R: Sometimes I contact the publishers and ask them for their opinion you see, because they have assigned in-house editors and I ask them what to do.

I: Okay, so are you given deadlines to complete your translation?

R: Yes, normally Fajar Bakti would give me a deadline of about a month.

I: A month for a 50-page book.

R: About that time, yes.

I: So your earlier books were they around 50 pages?

R: From 35-70 pages.

I: Oh I see, was there any delay in your translation?

R: Sometimes due to personal problems like illness, I have to delay for about a week or so.

I: So, do they accept the excuse?

R: Yes, normally.

I: So, no cut in payment.

R: No, they're quite understanding.

I: So who published your translated books.

R: Fajar Bakti mostly.

I: Fajar Bakti.

R: Yes.

I: So, how were you paid? Were you paid by word or in a lump sum as per book?

R: Actually, it depends on the book. Sometimes, they give a flat rate - about RM300-RM400 depending on the material. Sometimes, they calculate according to word.

I: Word - how much per word?

R: It's about 10 cents per word.

I: 10 cents per word.

R: Yes.

I: And were you happy with the payment?

R: Quite.

I: Quite happy.

R: Yes.

I: Are you getting royalty for the sale of the translated version?

R: No, we do not get royalty.

I: No royalty given.

R: No.

I: It's just a lump sum payment. So what were the problems and difficulties you faced when translating?

R: I mentioned earlier, normally is with the terminology. Most of the time with scientific books, it is the terminology and also common names of animals or common names of things that we don't get in this country, you see like for once I did a book on fishes, the common name of fishes, normally you don't find that kind of terminology in Malaysia, you know in the book of terminology, you know, so have to find a specific lecturer in the university to ask them.

I: So you had to translate the name of the fish within inverted commas as it is not found in Malaysia.

R: If it is not found in Malaysia, I must do my best to find the common name. If I cannot find it, I'll put it in italics.

I: In Italics.

R: Um.....Yeah.

I: Any other problems.

R: So far not much.

I: What about terminology, computer, the terminology books, did you buy it or Fajar Bakti gave it to you?

R: No, we have to buy it on our own.

I: How much did it cost?

R: Normally, terminology book is less than RM10.00.

I: Less than RM10.00, but it is worthwhile.

R: Yes, it is worthwhile.

I: So in your case, your translation was it done on a part-time basis or full-time basis?

R: Mostly, my work is done on a part-time basis.

I: Mostly on a part-time basis.

R: Yeah.

I: So, in your case how did you overcome the problems and difficulties?

R: Well, I am lucky of the fact that I have a group of friends who are translators, so I discuss with them my problems and also I can contact Dewan Bahasa to ask for advice.

I: And it's given.

R: Most of the time, it is given and they're quite helpful.

I: That's good. In your opinion, was your translation perfect?

R: Well, I'm striving towards that and I think there's still room for improvement.

I: So, was there editing done on your translation?

R: For Fajar Bakti books, they do have in-house science editor who does all the editing and checking.

I: Editing and checking is done.

R: Yes.

I: So up till now, how many of your translated books have been published?

R: I would say about 4.

I: 4 books have been published out of?

R: Out of 5.

I: One more?

R: One more is waiting to be published.

I: From your experience, the time you send in your typed translated version to Fajar Bakti to the time you see your translated book in the market, how long does it take?

R: About a year.

I: That's a long process. So don't you think that more information could have been added and the translated book could have been outdated.

R: Most probably, especially with frontier-kind of research. With children's books, not so much I think, progress is not so much.

I: So, what are your recommendations through experience for good and speedy translation of texts on Science and Technology.

R: Well, from my experience, the main thing is to get the terminology straight. Once you get that done, most of the hurdle, 80% , is cleared for Science and Technology that is, and then you have knowledge of the subject.

I: Subject specialist.

R: Right, you have to know your subject before you are able to translate. Okay and also experience helps.

I: So in your case, what is your field actually - which particular subject?

R: My actual field is embryology but I also do for Zoology books because my basic degree was in Zoology.

I: So, as a conclusion, would you like to say anything else on the field of translation?

R: I believe it's a fast-growing field but I think there is aim for a specialized kind of translation by people trained and experienced in the field of especially in the Sciences.

I: Do you think there is any method that a translator can use to make his translation faster?

R: I think it comes by experience.

I: Comes by experience. Do you think Dewan Bahasa could set up some software that can help translators speed up their process of translation? Now it is the era of Information Technology. Do you think this will help?

R: Yes, tremendously, especially something like a spell-check. It can help when you miss out. Maybe in the package, they could give you alternative words that can be used. I'm sure there are already packages like that tried out but I don't know whether they will be in the market soon.

I: Okay. I think that is all. Thank you very much.

R: You're welcome.

LIST OF TRANSLATED BOOKS BY PUAN RAMLAH

1. *People who change the world: Marconi.* (translated in 1995, about 70 pages).
2. *Aeroplanes.* (translated in 1996, about 40 pages).
3. *A Book of Papier Mache.* (translated in 1996, about 30 pages).
4. *A Book of Paper Engineering.* (translated in 1996, about 30 pages).
5. *Communication.* (translated in 1996, about 30 pages).
6. *Microsoft Word.* (translated in 1996, about 30 pages).
7. *A World Book of Encyclopedia.* (translated only a part of it in 1997, about 20 pages).

NOTE: All the above books (1 - 7) were published by Fajar Bakti. Puan Ramlah cannot remember the names of the original authors.

APPENDIX F 4

INTERVIEW FOUR: The following is an e-mail question and answer interview. The questions were asked by the researcher and the answers given via e-mail by Encik Rahman Wagiran, a lecturer attached to the Engineering Department in Universiti Putra Malaysia. He wanted to share his experience in translating a technical book with the researcher. His answers are as what is given below with no editing done.

Q: Who prompted or asked you or gave you inspiration to translate that technical book? What is the title of that book?

A: Title: Electronics: Circuit and devices (Elektronik: Litar dan Peranti). This book contains basic and introduction to electronics. Electronic engineering students and those from other programmes of studies like Physics and other engineering disciplines use this book. I can see that many students could benefit from the book especially they are normally the first year students. They just left the school.

Q: Did you translate the whole book or only some chapters in it?

A: 3 people were involved. We shared equally (more or less).

Q: What were the difficulties you faced while translating from English Language into Bahasa Malaysia e.g. use of terminology, syntax, cohesive devices etc.?

A: Can be many things. But if you do the translation in a group, you can discuss among members. Better do in a group than do it individually.

Q: How long did it take you to translate that book?

A: 6 months (more or less). At that time word processing was not as good as to date.

Q: Which body or organization asked you to translate e.g. ITNM or DBP or a private body?

A: DBP

Q: How was your name acknowledged in the book? For example was it written in big letters or just in small letters below the real author as translated by..... Was a short write-up written about you at the back of the book?

A: It was written in big letters. No write-up or anything about the translators.

Q: Are you given any royalty for the book written?

A: No.

Q: If no, the lump sum given - was it reasonable? Were you satisfied with the payment?

A: Given in lump sum. Can't remember how much but the amount is okay (reasonable). Satisfied (Money doesn't really matter to me at that time. What matter is to do something that I should do - as an academician (or teacher).

Q: Was there a delay in the payment?

A: No

Q: After translating (given the year) how much later was the book available in the market (in which year only did the book appear in the market?)

A: We finished in 1990. Only in 1995 the book appeared in the market (Too bad).

Q: Did you use the book in class?

A: Not directly my class but students taking courses related to the subject using it. We in UPM use that book as a textbook for certain courses - Electrical and Electronic technology.

Q: How did the students find the book - were they satisfied or did they find some ambiguity in the explanations or did they find that they were better off buying the original book in English?

A: I never ask. Let the students choose which book they want to use. What I can say is that there are few copies of the book available in UPM's library. The book is quite popular.....maybe the copy just not enough for so many students. Some students ask me about buying the book. (I know marketing by DBP is very poor, I should say.)

Q: Did you get any feedback on the book?

A: Yes, from the students. They said okay. From friends - some diagrams were not proper - typo error.

Q: Did the experience in translating make you feel that you would go on translating OR you felt that you could make more money teaching part-time or doing some other work?

A: I will go on translating. Recently, I got a contract with Renong Bhd. to translate another technical book. Unfortunately, the project has to be delayed due to current economic turmoil.

Q: From your experience, how can translators speed up the process of translating technical books from English into Malay? What things should they need or what methods should they follow?

Discipline and also the translators should be knowledgeable of the subject. Master in using word processing tools can be very helpful (It's a must I think).

Note: Dr. Samsinah (Case 4 participant of TAP) could not be interviewed as she had to attend to important matters and refused to give the researcher an appointment. Her experience in translating is found in the text itself on page 269. She has only translated brochures and pamphlets on pharmacy for hospitals and medical agencies and she has not documented this.

APPENDIX F 5

INTERVIEW FIVE: The following interview took place between the researcher and Associate Professor Dr. Nor Azila, from the Biochemistry Department, University of Malaya in her room at 2.40 p.m. on the 19th of June 2000. She has been translating science books for the past fifteen years.

Abbreviations used for Interview:

R = Researcher

NA = Nor Azila

R: Good afternoon and thank you for allowing me to interview you. Let's go to the first question. Where did you do your training as a translator?

NA: The first place that I did was in the Translation Society and another one with DBP and also I did a language course, an editor's course – I thus have completed the whole translation course. In the editors programme, we learnt the do's and don't's in editing and the process of editing – this can apply to any translation work irrespective of languages. The Translation Course was for six months while the Editors Course was for four months. I did it on a part-time basis.

R: Did you learn all about the theories and processes of translation?

NA: Yes.

R: Do you consider yourself a subject and language specialist?

NA: Subject, yes, language, not really. I still think that my work needs editing – it shouldn't go without editing because actually everybody's work needs to be edited – to you it might appear clear but still it needs to be checked, vetted, edited and read by someone so that the meaning put forward is clear.

R: How many science books have you translated? Please name them.

NA: I'll give you my list of translated works – seven all in.

R: How long did it take you to translate a book

NA: I never time myself. I always do it fast – for a book sometimes I take less than a year. I'm worried about the content getting out-of-date. Usually I translate every night without fail – up till midnight.

R: For how many years have you been translating science texts from English into Malay?

NA: About 15 years

R: Have you been acknowledged in the translated text? If yes, how?

NA: Yes, in the front cover translated by.

R: How did you go about translating the text? Could you please let me know the processes?

NA: If it is a book, I usually skim through first – I usually bargain with the person who asks me to translate to ensure that I get a chance to skim it first before I decide to translate. If the content is familiar to me and its content is something that I know, I'll accept the offer to translate. I must be comfortable with the book before I translate. I look at the book chapter by chapter and then I start translating by reading paragraph by paragraph. I must understand well first and then only do I translate sentence by sentence

R: How long does it take you to translate a page?

NA: I cannot tell you as I've never timed myself. I translate on a part-time basis whenever I can. I do it at lunch time – I translate straight into the computer.

R: What are the materials that you need with you in order to translate?

NA: Of course the dictionary – English-Malay, Malay-Malay, English-Malay, English-English, another text of the same subject matter for reference purposes.

R: Was there anything that you needed but did not have with you in your translation process?

NA: No, unless you don't have terminology that is, you have to think of how to coin a term for a word not found in the terminology lists.

R: Are you given deadlines to complete your translation? Was there any delay in your translation? If so, what was the cause?

NA: Yes – no delays.

R: Who published your translated books?

NA: DBP and some private publishers.

R: How were you paid? Were you happy with the payment? Are you getting royalty for the sale of the translated version?

NA: By cheque – I was paid on a word basis – 6 – 8 sen per word. I'd like to have more but I am happier doing it has a hobby – it gives me relaxation. At the moment, I've just completed one book but still there is no guarantee of payment. Royalty – not given for any of my publication.

R: What were the problems and difficulties you faced when translating?

NA: Trying to maintain the style of the language beautifully written in source text but when you translate the beauty is gone, also terminology which is new.

R: Was it done on a part-time or full-time basis?

NA: On a part-time basis.

R: How did you overcome the problems and difficulties?

NA: style – by breaking up of sentences but you lose the beauty of the language – content can be translated but it will not be as the way it is said in the original language form. Sometimes, science can be written beautifully in the artistic form and they use comparisons with things in the world and the comparisons are different here than there, so we say “as strong as an ox” – In Malay we say “kuat seperti” - any strong figure in Malay – if I can’t think I’ll call up my friends, ask my daughter as they would have things in school. Culture plays an important role – problem is finding equivalent terms in our culture. Terminology is a problem but I can overcome by finding equivalent terms reflected by the concept/situation of the term. The readers will know. If the word chosen does not trigger any form of thinking process in the reader then the word is not functional – if not you lose the content of the text. What’s important is understanding the text – remember they are students – they have limited knowledge. You can use paraphrasing to explain terms. I’ve written twice to the original author to have facts corrected. Finding reference terms is difficult. Sometimes I leave my computer, relax my mind, do something else and come back and I think better.

R: In your opinion, was your translation perfect?

NA: Never perfect. When you translate something, leave it for some time and come back and you can always find things which you can always fine-tune. Construction of sentences can be improved.

R: Was there any editing done on your translation? If yes, who did it?

NA: Yes – the editors at DBP. If they disagreed with whatever I wrote, then they’ll call me up and I’ll go back and discuss with them what I did. Sometimes they misunderstand the context of what I say. Although they are science graduates the depth of their knowledge is not enough. The content is to my perception and the language is at their level. Usually I go there – sometimes I chase them to find out when the book will be published – they then tell me that some parts need to be corrected. For a book, I have to visit them several times to discuss the content – as I translate, I give them chapter by chapter – it’s an on-going process. They never return to you once you have handed in your work because it never comes back – it’s their policy. Sometimes, when I check at DBP, I find one whole paragraph missing, then I’ll be cautious and have a discussion with the editor – as my name will be on it.

R: Up till now, how many of your translated books have been published?

NA: Seven – they don’t necessarily send me a copy.

R: What are your recommendations through experience for good and speedy translation of Science and Technology texts?

NA: I usually write to the original author when I come across facts which are incorrect and they usually thank me for correcting them. It’s important to know the subject, if your language is not that good, make sure that the editor is a good one in language and if later you’re not confident of his science, read back the edited version to ensure the content is not changed. In my experience, editing takes a longer period than translating. From the day I’ve completed translation – then it goes to the editors – sometimes editors change or are given a new posting – then a new one comes – starts all over again – it might take two to three years – slows down the process of translation. DBP gets the copyright approval

has to be asked again and this wastes time. Since 1993, DBP has been asked to revert to only publishing original written material and the publication of translated books has been given to ITNM but somehow it never got through.

R: As a conclusion, would you like to say anything else on the field of translation?

NA: Not enough, not fast enough. Scientific texts tend to become stale fast because development in Science is so fast and rapid especially micro Biology so if you don't translate it fast enough as what Japan does – so the book you translate is not going to sell – it's already old material. Even when a book is written and is published – after three to five years the facts are already old – then you translate after the book is already three to five years in the market – translating takes a further two to three years – after that it's published – the facts are already out-dated. That's why translated books are not selling. In Japan, the books are translated even before they are published, the book is already in blueprint form, they've already got copyright approval to translate – when the book comes out, in a month's time, they have already done the translation. The translated book comes out within a few months of the original text – of course it sells. The books are translated even before the original text is published. In Malaysia, when a book comes out, someone might read it and find it useful and thinks that translation is needed; then DBP has to look for translators, get the copyright approval and all this takes time. The whole machinery in the country is at fault. DBP has gone directly into publishing – this is the Ministry's instruction – it wants it to concentrate on language development and ITNM to deal with translated texts. In this way they have killed their own project – the support for translation.

List of translated books by Dr. Nor Azila

1. *Biological Energy Conservation – Oxidative Phosphorylation* by C.W. Jones.
Translated text – *Pengabadian tenaga Biologi – Fosforilasi Oksidatif* (1986)
Dewan Bahasa dan Pustaka, Ministry of Education, Malaysia.
2. *Hormone Action* by A.M. Malkinson
Translated text – *Tindakan Hormon* (1988). DBP, Ministry of Education, Malaysia.
3. *Cell Recognition* by M.F. Greaves
Translated text – *Pengecaman sel* (1989). DBP, Ministry of Education, Malaysia.
4. *The Pathogenesis of Infectious Diseases* by C.A. Mims (Chaps. 6 – 11)
Translated text – *Patogenesis Penyakit Berjangkit* (1992). DBP, Ministry of Education, Malaysia.
5. *Hormone and Metabolic Control* by D.A. White, B. Middleton and M. Baxter
Translated text – *Hormon dan Kawalan Metabolisme* (1992)
Dewan Bahasa dan Pustaka, Ministry of Education, Malaysia.
6. *Principles of Medicinal Chemistry* by W.O. Foye (5 chapters)
Translated text – *Prinsip Kimia Perubatan* (1994)
DBP, Ministry of Education, Malaysia.
7. *Formaldehyde release from Particle Board*
Translated text – *Pembebasan formaldehid daripada papan zarah* (1997)
Dewan Bahasa dan Pustaka, Ministry of Education, Malaysia.

APPENDIX G1

Oxford's (1990) SILL

DIRECT STRATEGIES	INDIRECT STRATEGIES
<p>1. Memory strategies</p> <ul style="list-style-type: none"> • Creating mental linkages (e.g. grouping, associating, elaborating) • Applying images and sound (e.g. using imagery, semantic mapping) • Reviewing well (structured reviewing) • Employing action (e.g. using physical response or sensation) <p>2. Cognitive strategies</p> <ul style="list-style-type: none"> • Practising (repeating, formally practicing with sounds and writing systems, recognising and using formulas and patterns, recombining and practicing naturalistically. • Receiving and sending messages (getting the idea quickly, using resources for receiving and sending messages.) • Analysing and reasoning (reasoning deductively, analysing expressions, analysing contrastively (across languages), translating, transferring) • Creating structure for input and output (taking notes, summarising, highlighting) <p>3. Compensation strategies</p> <ul style="list-style-type: none"> • Guessing intelligently (using linguistic clues, using other clues) • Overcoming limitations in speaking and writing (switching to the mother tongue, getting help, using mime or gesture, avoiding communication partially or totally, selecting the topic, adjusting or approximating the message, coining words, using a circumlocution or synonym) 	<p>1. Metacognitive strategies</p> <ul style="list-style-type: none"> • Centering your learning (overviewing and linking with already known material, paying attention, delaying speech production to focus on listening) • Arranging and planning (finding out about language, organising, setting goals and objectives, identifying the purpose of a language task, planning for a language task, seeking practice opportunities) • Evaluating (self-monitoring, self - evaluating) <p>2. Affective strategies</p> <ul style="list-style-type: none"> • Lowering your anxiety (using progressive relaxation, deep breathing or meditation, using music, using laughter) • Encouraging yourself (making positive statements, taking risks wisely, rewarding yourself) • Taking your emotional temperature (listening to your body, using a checklist, writing a language learning diary, discussing your feelings with someone else) <p>3. Social strategies</p> <ul style="list-style-type: none"> • Asking questions (asking for clarification or verification, asking for correction) • Cooperating with others (cooperating with peers, cooperating with proficient users of the language) • Empathising with others (developing cultural understanding, becoming aware of others thoughts and feelings)

SOURCE: Oxford (1990), Language Learning Strategies – What every teacher should know. New York : Newbury House Publishers

APPENDIX G2

O'Malley And Chamot's (1990) Model On Second Language Learning Strategies

METACOGNITIVE STRATEGIES

- 1 *Planning*: Previewing the organizing concept or principle of an anticipated learning task (*advance organization*); proposing strategies for handling an upcoming task; generating a plan for the parts, sequence, main ideas, or language functions to be used in handling a task (*organizational planning*).
- 2 *Directed attention*: Deciding in advance to attend in general to a learning task and to ignore irrelevant distractors; maintaining attention during task execution.
- 3 *Selective attention*: Deciding in advance to attend to specific aspects of language input or situational details that assist in performance of a task; attending to specific aspects of language input during task execution.
- 4 *Self-management*: Understanding the conditions that help one successfully accomplish language tasks and arranging for the presence of those conditions; controlling one's language performance to maximize use of what is already known.
- 5 *Self-monitoring*: Checking, verifying, or correcting one's comprehension or performance in the course of a language task.
 - a *Comprehension monitoring*: checking, verifying, or correcting one's understanding.
 - b *Predication monitoring*: checking, verifying, or correcting one's language production.
 - c *Auditory monitoring*: using one's 'ear' for the language (how something sounds) to make decisions.
 - d *Visual monitoring*: using one's 'eye' for the language (how something looks) to make decisions.
 - e *Style monitoring*: checking, verifying, or correcting based upon an internal stylistic register.
 - f *Strategy monitoring*: tracking use of how well a strategy is working.
 - g *Plan monitoring*: tracking how well a plan is working.
 - h *Double-check monitoring*: tracking, across the task, previously undertaken acts or possibilities considered.
- 6 *Problem identification*: Explicitly identifying the central point needing resolution in a task or identifying an aspect of the task that hinders its successful completion.
- 7 *Self-evaluation*: Checking the outcomes of one's own language performance against an internal measure of completeness and accuracy; checking one's language repertoire, strategy use, or ability to perform the task at hand.
 - a *Production evaluation*: checking one's work when the task is finished.
 - b *Performance evaluation*: judging one's overall execution of the task.
 - c *Ability evaluation*: judging one's ability to perform the task.
 - d *Strategy evaluation*: judging one's strategy use when the task is completed.
 - e *Language repertoire evaluation*: judging how much one knows of the L₂ at the word, phrase, sentence, or concept level.

COGNITIVE STRATEGIES

- 1 *Repetition*: Repeating a chunk of language (a word or phrase) in the course of performing a language task.
- 2 *Resourcing*: Using available reference sources of information about the target language, including dictionaries, textbooks, and prior work.

- 3 *Grouping*: Ordering, classifying, or labelling material used in a language task based on common attributes; recalling information based on grouping previously done.
- 4 *Note-taking*: Writing down key words and concepts in abbreviated verbal, graphic, or numerical form to assist performance of a language task.
- 5 *Deduction/induction*: Consciously applying learned or self-developed rules to produce or understand the target language.
- 6 *Substitution*: Selecting alternative approaches, revised plans, or different words or phrases to accomplish a language task.
- 7 *Elaboration*: Relating new information to prior knowledge; relating different parts of new information to each other; making meaningful personal associations to information presented.
- 8 *Personal elaboration*: making judgements about or reacting personally to the material presented.
- 9 *World elaboration*: using knowledge gained from experience in the world.
- 10 *Academic elaboration*: using knowledge gained in academic situations.
- 11 *Between parts elaboration*: relating parts of the task to each other.
- 12 *Questioning elaboration*: using a combination of questions and world knowledge to brainstorm logical solutions to a task.
- 13 *Self-evaluative elaboration*: judging self in relation to material.
- 14 *Creative elaboration*: making up a storyline, or adopting a clever perspective.
- 15 *Imagery*: using mental or actual pictures or visuals to represent information; coded as a separate category, but viewed as a form of elaboration.
- 16 *Summarization*: Making a mental or written summary of language and information presented in a task.
- 17 *Translation*: Rendering ideas from one language to another in a relatively verbatim manner.
- 18 *Transfer*: Using previously acquired linguistic knowledge to facilitate a language task.
- 19 *Inference*: Using available information to guess the meanings or usage of unfamiliar language items associated with a language task, to predict outcome, or to fill in missing information.

SOCIAL/AFFECTIVE STRATEGIES

- 1 *Questioning for clarification*: Asking for explanations, verification, repetitions, or examples about the material; asking for clarification or verification about the task; posing questions to the self.
- 2 *Cooperation*: Working together with peers to solve a problem, pool information, check a learning task, model a language activity, or get feedback on oral or written performance.
- 3 *Self-talk*: Reducing anxiety by using mental techniques that make one feel competent to do the learning task.
- 4 *Self-reinforcement*: Providing personal motivation by arranging rewards for oneself when a language learning activity has been successfully completed.

SOURCE: O'Malley, J.M and Chamot, A.U. (1990). Learning Strategies in Second Language Acquisition. Cambridge: Cambridge University Press

APPENDIX G3

- 1. A Description Of Oxford's (1990) SILL**
- 2. Examples Given from The TAPs of the Participants Using Oxford's (1990) SILL**

OXFORD'S MODEL OF DIRECT AND INDIRECT LANGUAGE LEARNING STRATEGIES

(1990: 37-51 and 135-148)

A summary of Oxford's (1990) and O'Malley and Chamot's (1990) language learning models are given in Chapter Two under Section 2.5.3 on page 274 and also in Appendices G1 and G2. This taxonomy is a well-established, highly reliable and valid language category which is also known popularly as SILL and it has been used in many previous language tasks by many researchers. Oxford's SILL forms the theoretical framework for this study. It will be mapped on to the translation process of the five participants who will participate in the Think-Aloud Protocols or TAPs. This is done to investigate whether SILL proposed by Oxford (1990) is used by the participants while translating.

The Direct Strategies

Oxford's (1990) SILL model comprises the direct strategies and indirect strategies. The direct strategies consist of the memory, cognitive and compensation strategies. The indirect strategies comprise the metacognitive, social and affective strategies.

The TAPs (see Appendices H1 to H5) which had already been analysed by the researcher will be used to provide examples to show that second/target language learning strategies are also used in the translation process by translators while translating scientific texts from English to Malay.

A. Memory Strategies

There are four sets of memory strategies which are creating mental linkages, applying images and sounds, reviewing well and employing action. These four sets are discussed below.

A. 1 Creating Mental Linkages

In this set, there are three strategies, which are grouping, associating/elaborating and using context. These are discussed below.

A.1.1 Grouping. This involves classifying or reclassifying language material into meaningful units, either mentally or in writing, to make the material easier to remember by reducing the number of discrete elements. Groups can be based on type of word (e.g. all nouns or verbs), topic (e.g. words about weather), practical function (e.g. apology, request, demand), similarity (e.g. warm, hot etc.) dissimilarity or opposition (e.g. friendly/unfriendly), the way one feels about something (e.g. like, dislike) and this strategy can be enhanced by labelling the groups or using different colours to represent different groups.

This is seen in the TAP where one participant (Case Three) groups the ideas involved in the passage "Childhood Asthma", which she chose to translate from English to Malay.

A 1.2 Associating/ Elaborating. This involves relating new language information to concepts already in memory, or relating one piece of information to another, to create meaningful associations in memory.

From the TAPs (Case One), it is seen for e.g. how two concepts, *tanggungjawab* meaning "responsible" as against *berperanan* meaning "plays a role" is handled by the participant who finally chooses *berperanan* to suit the contextual meaning given in the text.

A.1.3 Placing New Words into a Context. This involves placing a word or phrase in a meaningful sentence in order to remember it. This strategy involves a form of associating/elaborating, in which the new information is linked with a context.

For example, one of the participants (Case One) explains the term "cystinuria" in order to further understand the transport of amino acids into cells.

A.2 Applying Images and Sounds

This set comprises four strategies: using imagery, using keywords, semantic mapping and representing sounds in memory. These are discussed below.

A.2.1 Using imagery. This involves relating new language information to concepts in memory by means of meaningful visual imagery, either in the mind or in an actual drawing. This strategy can be used to remember abstract words by associating such words with a visual symbol or a picture of a concrete object.

For example one of the participants (Case One) translates "kidney stones" to *karang* that is "corals" in Malay because she has actually seen them and thus is able to come up with an accurate word which portrays the real object.

A.2.2 Semantic mapping. This involves making an arrangement of words into a picture, which has a key concept at the centre or at the top, and related words and concepts linked with the key concept by means of lines or arrows. This strategy involves meaningful imagery, grouping and associating; it visually shows how certain groups of words relate to each other.

For example how the participant (Case Two) maps the process of releasing hormones into the blood stream without a channel being involved.

A.2.3 Using keywords. This involves remembering a new word by using auditory and visual links. The first step is to identify a familiar word in one's own language that sounds like the new word - this is the 'auditory link.' The second step is to generate an

image of some relationship between the new word and a familiar one – this is the ‘visual link’.

For example how the participant (Case One) tries to find an equivalent term for “inherited disorder” in the Malay language by actually self-talking on the possibilities.

A.2.4 Representing sounds in memory. This involves remembering new language information according to its sound. This is a broad strategy that can use any number of techniques, all of which create a meaningful, sound-based association between the new material and already known material. For example, you can link a target language word with any other word in any language that sounds like the target language, using phonetic spelling or using rhymes to remember a word.

For example “asthma” is translated as *asma* in Malay (CaseThree).

A.3 Reviewing well

This category contains just one strategy called structured reviewing. Looking at new target language information once is not enough; it must be reviewed in order to be remembered.

A3.1 Structured Reviewing. This involves reviewing the text in carefully spaced intervals, at first close together and then more widely spaced apart.

This was practised by all the participants in this study (Case One to Five) once they had completed their translation.

A.4 Employing Action. This set consists of two strategies, which are the use of physical response or sensation and the use of mechanical tricks, both involving some kind of meaningful movement or action.

A.4.1 Using Physical Response or Sensation. This involves physically acting out a new expression for e.g. going to the door, or meaningfully relating a new expression to a physical feeling or sensation (e.g.warmth).

This was not used in the TAPs by the participants for this study.

A.4.2 Using Mechanical Techniques. This involves using creative but tangible techniques, especially involving moving or changing something which is concrete, in order to remember new target language information. Examples are writing words on cards and moving cards from one stack to another when a word is learnt and putting different types of material in separate sections of a language learning notebook.

This involves for example creating a terminology list by a translator based on his or her experience and practice over years of translating and this list can be referred to for future translation tasks. Some of the participants actually confessed to the researcher in their interview that they were actually doing it. However it was not used in the TAPs for this study.

B. Cognitive Strategies

The four sets of cognitive strategies are practicing, receiving and sending messages, analysing and reasoning and creating structure for input and output. These are discussed below.

B.1 Practising

This set comprises five strategies which are discussed below.

B.1.1 Repeating. This involves saying or doing something over and over: listening to something several times, rehearsing or imitating a native speaker. Sometimes the participants repeat a sentence or term for example *flagella* (Case Four), to try and find the closest matching equivalent term in the target language.

B.1.2 Formally Practicing with Sounds and Writing Systems. This involves practicing sounds (pronunciation, intonation, register etc.) in a variety of ways, but not yet in naturalistic communicative practice; or practicing the new writing of the target language.

Practising with sounds was not used in the TAPs by the participants for this study.

B.1.3 Recognising and Using Formulas and Patterns. This involves being aware of and/or using routine formulas (single, unanalysed units), such as “Hello, how are you?” and unanalysed patterns (which have at least one slot to be filled), such as, “It’s time to_____.” This involves the use of collocations and translators have to bear this in mind while translating to the target language.

For example, in Case One, the participant translates “urinary tract” as *saluran urinari* in Malay which follows a different structure from English.

B.1.4 Recombining. This involves combining known elements in new ways to produce a longer sequence, as in linking one phrase with another in a whole sentence.

For example, “common genetic error” (Case One) is translated in the target sentence as *salah satu penyakit warisan yang lazim ditemui* and then the translator completes the whole idea in one sentence.

B.1.5 Practicing Naturalistically. This involves practicing the new language in natural, realistic settings, as in participating in a conversation, reading a book or article, listening to a lecture, or writing a letter in the new language.

Here translators often discuss with their colleagues to clarify the use of certain terms in the target language, which is Malay in this study.

B. 2 Receiving and sending messages

This set has two strategies: getting the idea quickly and using resources for receiving and sending messages.

B. 2.1 Getting the idea quickly. This involves using skimming to determine the main ideas or scanning to find specific details of interest. This strategy helps learners understand rapidly what they hear or read in the new language. Preview questions often assist.

All the participants first skimmed the text to be translated to get the gist of it and this was articulated by them in their TAPs.

B.2.2 Using resources for receiving and sending messages. This involves using print or nonprint resources to understand incoming messages or produce outgoing messages. Here the participants referred to terminology lists, dictionaries and other books to clarify certain meanings which they found difficult to understand and this was clearly voiced by them while translating.

B. 3 Analysing and reasoning

This set comprises five strategies which are, reasoning deductively, analysing expressions, analysing contrastively, translating and transferring. These are discussed on the next page.

B.3.1 Reasoning Deductively. This involves using general rules and applying them to new target language situations. This is a top-down strategy leading from general to specific.

This involves comprehending the whole text to be translated and then translating sentence by sentence which the participants in this study did ensuring that there was coherence between one sentence and the other. The other thing that the participants ensured was that the sentences made sense and were logical to the target readers of the translated text in Malay.

B.3.2 Analysing Expressions. This involves determining the meaning of a new expression by breaking it down into parts and using the meanings of various parts to understand the meaning of the whole expression.

Scientific terms in the source text such as "gradient", "significantly lower", "cystinuria", "overlapping specificity", "molting process" needed analysis first before the participants could translate to the target language. Analysing difficult expressions is found in all the five cases using the TAP technique while translating.

B.3.3 Analysing Contrastively. This involves comparing elements (sounds, vocabulary, grammar) of the new language with elements of one's own language to determine similarities and differences.

This again related terminology such as "kidney stones" which involved the concept of translating culture and the translator/participant (Case One) chose *karang* because she felt that corals was more appropriate for the readers of the Malay culture and furthermore the translator had actually seen kidney stones as she is from the Faculty of Medicine. Other terms involving this strategy were "responsibility", "electron microscope", "the type-specific opiate" etc. which involved processing the terms contrastively and making sure that the target reader will understand the terms translated to the target language.

B.3.4 Translating. This involves converting a target language expression into the native language (at various levels, from words and phrases all the way up to whole texts); or converting the native language into the target language, using one language as the basis for understanding or producing another. This strategy allows one to use one's own language as the basis for understanding what he/she reads in the target language. It also helps one to produce the target language in speech or writing. However, word-for-word (verbatim) translation, though a frequent occurrence among beginners can become a crutch or provide the wrong interpretation of target language material.

In the TAPs study, the participants actually articulated their thoughts aloud when they made it clear that they do not believe in word-for-word translation. They aimed for dynamic or free translation because for scientific texts they had to ensure that the content was translated from English to Malay clearly, accurately and naturally so that the *skopos* or purpose of the translation was fulfilled, that is the target readers must be able to comprehend the target text in Malay.

B.3.5 Transferring. This involves directly applying knowledge of words, concepts or structures from one language to another in order to understand or produce an expression in the new language.

Here the fact that all the five participants(part-time translators from the University of Malaya) were subject specialists in the field that they were translating, they really did not have any problems in comprehending the source text. They had the background and expertise in the field and were able to transfer the concepts quite easily. All the participants for the TAPs were native speakers of Malay and had the intuition for the language and were able to do the transfer from the source language to the target language quite easily.

B.4 Creating structure for input and output

This set comprises three strategies which are taking notes, summarising and highlighting. All these strategies are necessary for both comprehension and production in the new language.

B.4.1 Taking notes. This involves writing down the main idea or specific points. This strategy can involve raw notes, or it can comprise a more systematic form of note-taking such as the shopping list format, the T-formation, the semantic map or the standard outline form.

Here the participants of the TAPs actually took note of the difficult concepts which they had to look up in terminology lists or they felt that they had to consult their friends. Some of these terms were "flagella", "molting process", "responsibility", "steel", "soldering", "brazed", "riveted", "welded" etc.

B.4.2 Summarising. This involves making a summary or abstract of a longer passage. In the TAPs, all the participants first read the whole text to be translated and made a summary of it to ensure that they knew the gist of it before they started to translate sentence by sentence.

B.4.3 Highlighting. This involves using a variety of emphasis techniques (such as underlining, starring or colour-coding) to focus on important information in a passage. Here one of the participants (Case One) actually articulated aloud that she will bold the title and important terms in the target translated text for example the word “cystinuria” which is a disease that needs to be elaborated.

C. Compensation Strategies

Compensation strategies enable learners to use the new language for either comprehension or production despite limitations in knowledge. They are intended to make up for an inadequate repertoire of grammar and, especially, of vocabulary. This set comprises two strategies: guessing intelligently in listening and reading and overcoming limitations in speaking and writing. These are explained below.

C.1. Guessing intelligently in Listening and Reading. The two strategies in this set are using linguistic clues and using other clues.

C1.1 Using Linguistic Clues. This involves seeking and using language-based clues in order to guess the meaning of what is heard or read in the target language, in the absence of complete knowledge of vocabulary, grammar, or other target language elements. Language-based clues may come from aspects of the target language that the learner already knows, from the learners' own language, or from another language.

In the TAPs, one of the participants (Case Three) had to choose between the two alternatives identified for the phrase “emotional response” that is between the two target equivalent terms *gerakbalas* and *tindakbalas*. She finally chose *gerakbalas* as it suited

the context of situation or contextual meaning in the passage whereas *tindakbalas* is usually used in the field of chemistry which refers to reaction between chemicals.

C.1.2 Using Other Clues. This involves seeking and using clues that are not language-based in order to guess the meaning of what is heard or read in the target language, in the absence of complete knowledge of vocabulary, grammar, or other target language elements. Non-language clues may come from a wide variety of sources: knowledge of context, situation, text structure, personal relationships, topic or “general world knowledge”.

Being subject specialists, the participants in this case study using TAPs, had no problem in understanding the content of the source language texts and being native speakers of Malay they did not have much of a problem in translating to their own mother tongue. For difficult terminology, they referred to the terminology lists prepared by DBP and also constantly discussed their problems with their colleagues.

C.2. Overcoming Limitations in Speaking and Writing. Eight strategies are involved in this set. Some of these are dedicated solely to speaking, but some can be used for writing as well.

C.2.1 Switching to the Mother Tongue. This involves using the mother tongue for an expression without translating it. This strategy may also include adding word endings from the new language onto words from the mother tongue.

For words where it was difficult to find an equivalent Malay term, the participants used the same source language word but gave it a phonetic spelling in Malay for example “cystinuria” was translated as *sistinuria*, “sperm” was translated as *sperma* etc.

C.2.2 Getting Help. This involves asking someone for help by hesitating or explicitly asking for the person to provide the missing expression in the target language.

Here the participants confessed in their interview that when they faced problems, they often contacted DBP or they had brainstorming sessions with their colleagues who were also involved with translation.

C.2.3 Using Mime or Gesture. This involves using physical motion, such as mime or gesture, in place of an expression to indicate the meaning.

For the TAPs, the participants expressed themselves verbally and thus mime or gestures were not necessary for all of the participants.

C.2.4 Avoiding Communication Partially or Totally. This involves partially or totally avoiding communication when difficulties are anticipated. This strategy may involve avoiding communication in general, avoiding certain topics, avoiding specific expressions or abandoning communication in mid-utterance.

In the TAPs, one participant had a choice between the terms *defektif* and *rosak* for the source language term “defective”, and she chose *rosak*, because this term is very familiar to Malaysian students who come across it often whereas *defektif* might not be a good choice as some Malay students are weak in English and might not understand this borrowed term.

C.2.5 Selecting the Topic. This involves choosing the topic of conversation in order to direct the communication to one’s own interests and make sure the topic is one in which the learner has sufficient vocabulary and grammar to converse.

Here the participants chose to translate texts which they were familiar with or in other words they had the expertise in these fields for example Biochemistry, Pharmacology, Biology, Zoology etc.

C.2.6 Adjusting or Approximating the Message. This involves altering the message by omitting some items of information, making ideas simpler or less precise, or saying something slightly different that means almost the same thing, such as saying *pencil* for *pen*.

Here the participants used paraphrasing in order to communicate the information in the target text in a simple way and one of them (Case Four) actually articulated her thoughts aloud when she said, "I always translate as though I am explaining something to someone".

C.2.7 Coining Words. This involves making up new words to communicate the desired idea, such as *paper-holder* for *notebook*.

Here the participants did inform the researcher that when certain words are not found in the terminology lists prepared by DBP, they take it upon themselves to coin their own word which is usually the source language word spelt phonetically, for example "pesticide" might be translated as *pestisid*. Anyway, to ensure that their translated version would be accepted by DBP, the new word coined by them was usually informed to the authorities at DBP so that they could forward their suggestion to the terminology committee involved in that subject area.

C.2.8 Using a Circumlocution or Synonym. This involves getting the meaning across by describing the concept (circumlocution) or using a word that means the same thing (synonym); for example, "what you use to wash dishes with" as a description for dishrag.

Here, the participants found the source language sentences to be too long. They solved it by dividing the complex sentence to two or three shorter sentences to make translation more manageable. Difficult concepts such as "overlapping specificity" had to be simplified by the participant who acknowledged that it is a difficult term to mean that "the same one may carry more than one type of amino acids" and only then did she (Case One) translate it as "*Sekurang-kurangnya tujuh system pengangkutan yang berlainan diketahui yang mempunyai kekhususan yang bertindihan untuk asid amino yang berlainan*".

The Indirect Language Learning Strategies

The Indirect Language Learning Strategies are divided into the metacognitive, affective and social strategies and are described below. They are called 'indirect' because they support and manage language learning without (in many instances) directly involving the target language. These strategies work in tandem with the direct strategies and are useful in virtually all language learning situations and are applicable to all four language skills: listening, reading, speaking and writing.

A. Metacognitive Strategies

"Metacognitive" means beyond, beside, or with the cognitive. The metacognitive strategies include three strategy sets: centring your learning, arranging and planning your learning and evaluating your learning.

A.1. Centering your Learning. This set of three strategies helps learners to converge their attention and energies on certain language tasks, activities, skills or materials. Use of these strategies provides a focus for language learning.

Here the participants concentrate on the texts to be translated and actually use resources such as terminology lists, dictionaries etc. to help them in this task.

A.1.1 Overviewing and Linking with Already Known Material. This includes overviewing comprehensively a key concept, principle or set of materials in an upcoming language activity and associating it with what is already known. This strategy can be accomplished in many different ways, but it is often helpful to follow three steps: learning why the activity is being done, building the needed vocabulary, and making the associations.

The five participants are subject specialists and they are able to link the content in the given scientific text to their background knowledge to facilitate their translation process.

A.1.2 Paying attention. This involves deciding in advance to pay attention in general to a language learning task and to ignore distractors (by directed attention), and/or to pay attention to specific aspects of the language or to situational details (by selective attention).

Here the participants decided to concentrate on one sentence and after translating it freely, they proceeded to pay attention to the next sentence and this process was continued until the end of the text to be translated was accomplished.

A.1.3 Delaying Speech Production to Focus on Listening. This involves deciding in advance to delay speech production in the new language either totally or partially, until listening comprehension skills are better developed. Some language theorists encourage a 'silent period' of delayed speech as part of the curriculum, but there is debate as to whether all students require this.

Here the participants actually read aloud or to themselves the whole text to be translated first to understand what it is all about before deciding on how to go about translating it.

A.2 Arranging and Planning Your Learning. This set contains six strategies, all of which help learners to organise and plan so as to get the most of language learning. These strategies touch many areas: finding out about language learning, organising the schedule and the environment, setting goals and objectives, considering task purposes, planning for tasks and seeking chances to practice the language. These are described below.

A.2.1 Finding Out About Language Learning. This involves making effort to find out how language learning works by reading books and talking with other people, and then using this information to help improve one's own language learning.

For translation tasks, the participants actually do the same as translation involves a pair of languages, in this study English and Malay, and they constantly keep on reading books on how these languages function so that their translation product is always

presented in a clear, accurate and natural manner. Target readers have to be able to comprehend the target language text and it must not sound awkward to them. Translators are aware of this and therefore they take pains to ensure a good translated product.

A.2.2 Organising. This involves understanding and using conditions related to optimal learning of the new language, organising one's schedule, physical environment (e.g. space, temperature, sound, lighting) and language learning notebook.

Here the participants ensure that all the translation tools needed for their translation task are readily available beside them so that while translating they do not have to go round searching for their translation tools as this may disrupt their translation process. In other words organizing for the translation task ahead of them is important.

A.2.3 Setting Goals and Objectives. This involves setting aims for language learning, including long-term goals (such as being able to use the language for informal conversation by the end of the year) or short-term objectives (such as finishing reading a short story by Friday).

Normally, the participants are given deadlines to complete their translation task by either DBP or ITNMB and they try their best to deliver the product by the deadline given to them. Even though they are part-time, non-professional translators, they still have to meet the deadlines given as they have to sign a contract with the commissioner of the translation task, normally it is either the authorities at DBP or ITNMB.

A.2.4 Identifying the Purpose of a Language Task. This involves deciding the purpose of a particular language task involving listening, reading, speaking or writing. For example, listening to the radio to get the latest news on the stock exchange, reading a play for enjoyment, speaking to the cashier to buy a train ticket, writing a letter to persuade a friend not to do something rash.

For translation tasks, it is important for the translators to know the target readers – are they first year students or Form 6 students? Then the translators ensure that the purpose or *skopos* is fulfilled – the language used must be kept to the level of the students and it is here that the translators have to ensure that their translation meet their demands. They work at simplifying the difficult concepts using circumlocution or paraphrasing and using simpler terms instead of more sophisticated terms which are beyond the reach of the target readers.

A.2.5 Planning for a Language Task. This involves planning for the language elements and functions necessary for an anticipated language task or situation. This strategy includes four steps: describing the task or situation, determining its requirements, checking one's own linguistic resources and determining additional language elements or functions necessary for the task or situation.

Planning for a translation task is similar to organising for it and the participants who are experienced translators are well aware of this important aspect because it ensures the smooth flow of the translation process.

A.2.6 Seeking Practice Opportunities. This involves seeking out or creating opportunities to practice the new language in naturalistic situations, such as going to a second/foreign language cinema, attending a party where the language will be spoken, or joining an international social club. Consciously thinking in the new language also provides practice opportunities.

Here the participants often have brainstorming sessions where terminology is concerned, some are actually in the terminology committee (for example Case One and Case Five) and often they attend short courses conducted by DBP on translation to keep abreast of the latest theories and models of translation.

A.3. Evaluating Your Learning. This set includes two related strategies, which are self-monitoring and self-evaluating which aid learners in checking their language

performance. One strategy involves noticing and learning from errors, and the other concerns evaluating overall progress.

In the TAPs, it is seen how the participants actually monitor their translation product by constantly going back and revising what has already been translated and improving it.

A.3.1 Self-Monitoring. This includes identifying errors in understanding or producing the new language, determining which ones are important (those that cause serious confusion or offense), tracking the source of important errors, and trying to eliminate such errors.

In the TAPs, it is seen that the participants always make it a point to monitor their translation process. Whenever they think that the translation is ambiguous, they make it a point to improve on it so that the facts conveyed are accurate and easy to comprehend.

A.3.2 Self-Evaluating. This includes evaluating one's own progress in the new language, for instance, by checking to see whether one is reading faster and understanding more than one month or six months ago, or whether one is understanding a greater percentage of each conversation.

In the TAPs, the participants actually self-evaluated their understanding of the source English scientific text by repeating and thinking and hesitating before processing the content to the target language.

B. Affective Strategies

The term *affective* refers to emotions, attitudes, motivations and values. The strategies used under this set include lowering your anxiety, encouraging yourself and taking your emotional temperature.

B.1. Lowering your anxiety. This set comprises three anxiety-reducing strategies where each has a physical component and a mental component.

B.1.1 Using Progressive Relaxation, Deep Breathing or Meditation. This involves using the technique of alternately tensing and relaxing all of the major muscle groups in

the body, as well as the muscles in the neck and face in order to relax; or the technique of breathing deeply from the diaphragm; or the technique of meditating by focusing on a mental image or sound.

From the interviews after the TAPs, the researcher was informed by the participants that when they were facing problems in their translation, they usually leave it aside and take a walk or indulge in some other activity to relax. After some time, they go back to their translation and they realize that they can perform and think better and they manage to find solutions to their problems. However, this was not practiced by the participants in the TAPs in this study.

B.1.2 Using Music. This involves listening to soothing music, such as a classical concert, as a way to relax.

From the interviews, the participants sometimes while translating at night at home, they take a break and relax by listening to music and after this they feel better and realize they are refreshed and can translate faster and better.

B.1.3 Using Laughter. This involves using laughter to relax by watching a funny movie, reading a humorous book, listening to jokes and so on.

From the interviews, the participants sometimes use laughter while brainstorming with their colleagues when someone sometimes comes up with a new term for a source language term not found in the terminology list prepared by DBP. In this way they relax and together help each other solve their terminology problems.

B.2 Encouraging Yourself. This set of three strategies is often forgotten by language learners, especially those who expect encouragement mainly from other people and do not realise they can provide their own.

From the interviews, the researcher came to know that even though only a lump sum is given to the participants (part-time translators) once they have completed translating a

textbook, the participants are happy with the money and actually enjoy doing translation because they encourage themselves professionally in this field.

B.2.1 Making Positive Statements. This involves saying or writing positive statements to oneself in order to feel more confident in learning the new language.

From the interviews, the researcher came to know that the participants always think of translation in a positive light. Besides the money, they see it as a way of improving themselves further in their own field because translation involves research, resourcing and further reading in their own chosen fields which is also a boost to their careers as lecturers and professors of science.

B.2.2 Taking Risks Wisely. This involves pushing oneself to take risks in a language learning situation, even though there is a chance of making a mistake or looking foolish. Risks must be tempered with good judgement.

The participants informed the researcher that they take risks because by making mistakes and getting corrected by their own colleagues or editors at DBP, they further improve themselves professionally.

B.2.3 Rewarding Yourself. This includes giving oneself a valuable reward for a particularly good performance in the new language.

Translation does bring in rewards at the end – financially as well as professionally and the participants actually do it because they know of its benefits as they like the money as well as the experience which makes them better professionally.

B.3 Taking your Emotional Temperature. The four strategies in this set help learners to assess their feelings, motivations, and attitudes and, in many cases to relate them to language tasks. Unless learners know how they are feeling and why they are feeling that way, they are less able to control their affective side. The strategies in this set are particularly helpful for discerning negative attitudes and emotions that impede language learning progress.

The participants have been translating for years and they know that they can take the pressure and they told the researcher that they are emotionally prepared for this task because they like doing it.

B.3.1 Listening to Your Body. This involves paying attention to signals given by the body. These signals may be negative, reflecting stress, tension, worry, fear and anger, or they may be positive, indicating happiness, interest, calmness and pleasure.

The participants told the researcher that because translation is not their rice bowl, they have to learn to share the chapters in a book so that the translation can be completed faster and they learn to work together as a team.

B.3.2 Using a Checklist. This involves using a checklist to discover feelings, attitudes, and motivations concerning language learning in general, as well as concerning specific language tasks.

Here the participants ensure that they keep themselves constantly updated with the latest in translation via DBP. They make sure that they monitor their drafts and they improve on it daily until the final manuscript is ready to be presented to the commissioner of translation, that is either DBP or ITNMB.

B.3.3 Writing a Language Learning Diary. This involves writing a diary or journal to keep track of events and feelings in the process of learning a new language.

The participants do keep a diary of their translated products as they constantly refer to them for their future tasks. These are considered achievements and they mention them for their annual performance report at their workplace.

B.3.4 Discussing Your Feelings with Someone Else. This involves talking with another person (teacher, friend, relative) to discover and express feelings about language learning.

The participants constantly keep in touch with other translators in their field of specialization for brainstorming sessions to get help where terminology is concerned and sometimes to share the workload.

C. Social Strategies

According to Oxford (1990: 144), "language is a form of social behaviour; it is communication, and communication occurs between and among people. Under this set, there are three strategies.

C.1 Asking Questions. This set of strategies involves asking someone, possibly a teacher or native speaker or even a more proficient fellow learner, for clarification, verification or correction.

From the TAPs, the participants acknowledge the fact that they turn to the authorities at DBP and their own colleagues to get their difficulties in translation answered. The difficulties include terminology and trying their best to keep to the deadlines in the contract signed with DBP or any other commissioner of the translation task.

C.1.1 Asking for Clarification or Verification. This involves asking the speaker to repeat, paraphrase, explain, slow down or give examples; asking if a specific utterance is correct or if a rule fits a particular case; paraphrasing or repeating to get feedback on whether something is correct.

Again the participants often get confirmation of their doubts from the authorities at DBP or their colleagues.

C.1.2 Asking for Correction. This involves asking someone for correction in a conversation. This strategy most often occurs in conversation but may also be applied to writing.

Here the participants from the TAPs have their translated versions corrected by the editors at DBP and they are paid on how well they do their translation task. If there are

many errors in their work, they are paid less and if they show improvement, they are paid better.

C.2 Cooperating with Others. This set comprises two strategies. These strategies are the basis of cooperative language learning, which not only increases learners' language performance but also enhances self-worth and social acceptance.

Cooperation among colleagues in the same field is a great asset to the participants and they look forward to working with these kind colleagues and with authorities who are empathetic to their situation.

C.2.1 Cooperating with Peers. This involves working with other language learners to improve language skills. This strategy can involve a regular learning partner or a temporary pair or small group. This strategy frequently involves controlling impulses toward competitiveness and rivalry.

Generally the participants share the chapters in a book to be translated equally and in this way they ensure that their earnings are shared. By working fast in teams and by working well, they can ensure a small portion of the market in the field of translation.

C.2.2 Cooperating with Proficient Users of the New Language. This involves working with native speakers or other proficient users of the new language, usually outside of the language classroom. This strategy involves particular attention to the conversational roles each person takes.

Here, the participants must be willing to work with the editors at DBP who are language specialists. They must ensure that while concentrating just on the language, the content is made ambiguous. As such the participants usually request that the translated manuscript is returned to them for reviewing purposes.

C. 3. Empathising with others. Empathy can be developed more easily when language learners to use these two strategies.

Participants expect empathy from their families and colleagues. If they get this, they are very appreciative and grateful because translation involves a lot of compromise from family members and colleagues who must learn to share ideas and knowledge.

C.3.1 Developing Cultural Understanding. This involves trying to empathise with another person through learning about the culture, and trying to understand the other person's relation to that culture.

In this study involving the TAPs, the participants were Malays and thus they understood the culture of the target readers who are Malaysians. The Malaysian culture has to be inculcated in their translated work and they emphasise maintaining it.

C.3.2 Becoming Aware of Others' Thoughts and Feelings. This involves observing the behaviours of others as a possible expression of their thoughts and feelings; and when appropriate, asking about the thoughts and feelings of others.

The participants are aware of others' thoughts and feelings about their work and they make sure that they do their part-time translation tasks during their free time at work or at night in their homes. They do not intrude into their professional hours while at work and they ensure that their main rice bowl or main profession is not affected while indulging in translation on a part-time basis.

APPENDIX H 1

CASE ONE: The first think-aloud protocol (TAP) is by a lady Biochemistry lecturer, from the Faculty of Medicine, University of Malaya who has translated seven Science books from English into Malay and has fifteen years of experience as a part-time translator. Here, she has translated a passage entitled "Transport of Amino Acids Into Cells".

Translation versus Original

Source Text in English (Excerpt taken from <u>Biochemistry - Second Edition</u> 1994. Pamela C. Chause and Richard A. Harvey U.S.A : J.B. Lippincott Co.)	Final translated version in Malay
<p><u>Transport of Amino Acids into Cells</u></p> <p>The concentration of free amino acids in the extracellular fluids is significantly lower than that within the cells of the body. This concentration gradient is maintained because active transport systems, driven by the hydrolysis of ATP are required for movement of amino acids from the extra cellular space into cells. At least seven different transport systems are known that have overlapping specificity for different amino acids. One transport system is responsible for re-absorption in kidney tubules of the amino acids cysteine, ornithine, arginine and lysine. In the inherited disorder <i>cystinuria</i>, this carrier system is defective, resulting in the appearance of all four amino acids in the urine. <i>Cystinuria</i> occurs at a frequency of 1 in 7000 individuals, making it one of the most common inherited diseases and the most common genetic error of amino acid transport. The disease expresses itself clinically by the precipitation of cystine to form kidney stones (calculi), which can block the urinary tract.</p>	<p><u>Pengangkutan asid amino ke dalam sel</u></p> <p>Kepekatan asid amino bebas di dalam cecair luar sel adalah lebih rendah daripada kepekataannya di dalam sel tubuh. Cerun kepekataannya dikekalkan kerana sistem pengangkutan aktif yang didorong oleh hidrolisis ATP, digunakan untuk pergerakan asid amino dari ruang di luar sel ke dalam sel. Sekurang-kurangnya tujuh sistem pengangkutan yang berlainan diketahui yang mempunyai kekhususan yang bertindihan untuk asid amino yang berlainan. Salah satu daripada sistem pengangkutan tersebut berperanan untuk menyerap semula asid amino, sisteina, ornitina, arginina dan lisina pada tubul ginjal. Dalam penyakit warisan <i>sistinuria</i>, sistem pengangkut ini rosak yang mengakibatkan ke-empat-empat asid amino muncul di dalam air kencing. <i>Sistinuria</i> berlaku pada kekerapan sebanyak 1 dalam 7000 individu, yang menjadikannya salah satu penyakit warisan yang lazim ditemui dan ralat genetik yang paling lazim berlaku untuk pengangkutan asid amino. Secara klinikal, penyakit ini menjadi ketara melalui pemendapan sistina sebagai karang ginjal (kalkulus) yang mungkin menyumbat saluran urinari.</p>

Think-Aloud Protocol (TAP)

Think-Aloud Protocol transcribed	Analysis of TAP by researcher
<p>First I'll read the text (reads text to herself loudly). The main content of this paragraph is transport of amino acids into cells. Now, I'll type everything into the computer. Transport is <i>pengangkutan</i> so,</p> <p>Pengangkutan asid amino ke dalam sel</p> <p>That being the title I've made it bold. Now I go to the main text (reads the first sentence - The concentration of free amino acids in the extracellular fluids is significantly lower than that within the cells of the body). This means that the concentration in extra-cellular cells is lower than in body.</p> <p>Concentration is <i>kepekatan</i>, so:</p> <p><i>Kepekatan asid amino di dalam cecair luar sel adalah (significantly lower is lebih rendah) lebih rendah daripada kepekatan di dalam sel tubuh.</i> Let me read the sentence in the text again and now I'll read the translated version (reads and is satisfied). Now, the next sentence (reads it - The concentration gradient is maintained because active transport systems driven by the hydrolysis of ATP are required for movement of amino acids from the extra cellular space into cells). Gradient is <i>kecerunan</i> so:</p> <p><i>Cerun kepekataannya dikekalkan kerana sistem pengangkutan aktif, yang didorong oleh hidrolisis ATP, digunakan untuk pergerakan asid amino dari cecair (let me read in English again, it's space, so <i>ruang not cecair</i>) dari ruang di luar sel ke dalam sel.</i> (reads English sentence again and then reads the Malay sentence and is satisfied with the translation).</p> <p>Now to the next sentence (reads - At least seven different transport systems are known that have overlapping specificity for different amino acids). Overlapping specificity, that's a difficult one, that means the same one may carry more than one type of amino acids. At least is <i>sekurang-kurang</i> so:</p> <p><i>Sekurang-kurangnya tujuh sistem pengangkutan yang berlainan diketahui yang mempunyai kekhususan yang</i></p>	<p>Planning and organising - making a decision and implementing it.</p> <p>Summarising</p> <p>Planning and organising-making a decision and carrying it out.</p> <p>Thinking - translating.</p> <p>Highlighting . Planning and organising</p> <p>Reading source text</p> <p>Comprehension of meaning - thinking and paraphrasing</p> <p>Analysing and reasoning - translating</p> <p>Repetition -pausing - reverting to English phrase -thinking and continues translating.</p> <p>Production evaluation: rereads English sentence and compares with translated version in Malay - displays contentment.</p> <p>Planning and organisation</p> <p>Reads source text in English</p> <p>Analysing and reasoning: translating</p> <p>Repetition: stops for clarification- rereads phrase in English - confirms equivalent word in Malay and continues translating.</p> <p>Production evaluation: rereads English sentence and compares with translated sentence - shows satisfaction.</p> <p>Planning and organizing - making a decision and implementing it. Reads in English</p> <p>Repetition - tells phrase is tough -thinks and paraphrases - understands the term.</p> <p>Analysing and reasoning: translating</p>

<p><i>bertindihan untuk asid amino yang berlainan. As I read in Malay, my brain thinks in English.</i></p> <p>Now, the next statement (reads in English " One transport system is responsible for reabsorption in kidney tubules of the amino acids cysteine, ornithine, arginine and lysine." I can translate immediately in my brain. Responsible - <i>tanggungjawab</i> is used for man, here I would like to use the word <i>berperanan</i> which is more appropriate. Translation should not be literal, it should be more of understanding so that the Malay version would not sound <i>janggal</i>, that is, funny. The word "in" , you don't translate as <i>dalam</i> but as <i>pada</i> which means "at" - the process at the kidney. When you talk in general, you say "at" not "in" they'll know which direction it goes in and out - this is just an intro. My translation:</p> <p><i>Salah satu daripada sistem pengangkutan tersebut berperanan untuk menyerap semula asid amino sisteina, ornitina, arginina dan lisina pada tubul ginjal.</i> Now the next statement, " In the inherited disorder cystinuria, this carrier system is defective. Now,"inherited disorder", you can translate into <i>penyakit warisan</i>. In this context it is inherited, if translated as <i>gangguan terwaris</i>, it is too direct. In translation, the meaning will not be understood by the readers, thus I shall use the term <i>penyakit warisan</i>, as the target readers, the university students will understand it. Cystinuria means a lot of cystin, that is, a lot of amino acids in the urine which cannot be absorbed and thus goes down in the urine. "Carrier system" can be translated as <i>sistem pengangkutan</i> . Defective can be translated as <i>rosak</i>. Some people would like to use "<i>defektif</i>", but if you don't know English, it is <i>rosak</i>, can tell the students about this in the tutorial class. The translation is:</p> <p><i>Dalam penyakit warisan sistinuria (have to bold it, name of disease) sistem pengangkut ini rosak yang mengakibatkan ke-empat-empat asid amino muncul di dalam air kencing.</i> The next sentence "Cystinuria occurs at a frequency of 1 in 7000 individuals, making it one of the most</p>	<p>Self-talk: tells about how her mind is functioning</p> <p>Planning and organising – making a decision and carrying it out. Reads in English</p> <p>Ability evaluation: tells of her ability to tackle this sentence-able to do translating fast. Associates the term to its common use but is able to pick a better choice to suit the context of the situation. Tells of her belief in performing the translation task – how the translated version should be so that it is acceptable to the target readers. Tells of how the preposition "in" should be translated in this context so that the target readers of the translated version will get the meaning right while reading.</p> <p>Analysing and reasoning: translating</p> <p>Planning and organising – making a decision. Reads in English</p> <p>Comprehension monitoring - stops at a term – thinks how it should be translated. Chooses one which will be more easily understood by the target readers of the translated version – able to empathise with the students being an experienced lecturer.</p> <p>Elaboration - explains the meaning of this disease – shows she is a subject specialist.</p> <p>Tells of how a term can be translated and understood in Malay from English. Gives options for terms in Malay but chooses one that is very simple – tells of possible equivalents in Malay.</p> <p>Highlighting</p> <p>Translating</p> <p>Reads in English</p>
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<p>common genetic errors of amino acid transport."</p> <p>Most common genetic error can be translated as <i>ralat genetik yang paling umum</i> (now <i>umum</i> means general, here the word is common, therefore <i>lazim</i> is a better choice) Now I'll translate:</p> <p><i>Sistinuria berlaku pada kekerapan sebanyak 1 dalam 7000 individu, yang menjadikannya salah satu penyakit warisan yang lazim ditemui dan ralat genetik yang paling lazim berlaku untuk pengangkutan asid amino.</i></p> <p>Now the next sentence - reads "The disease expresses itself clinically by the precipitation of cystine to form kidney stones (calculi), which can block the urinary tract." Precipitation of cystine to form kidney stones is <i>pemendapan sistina sebagai karang</i> (stones are translated as <i>karang</i> or corals because they are not stones but rather corals in texture, any stones, for example bile stones or what we call calculus are termed corals. "which can block" can be translated as <i>yang mungkin menyumbat</i>.</p> <p>Urinary tract can be translated as <i>trak</i> or <i>saluran urinari</i>. Urinary is the whole system, that is, the urether and bladder. Normally, the stones are found in the kidney and come down the tract and thus block the flow of urine. My translation:</p> <p><i>Secara klinikal penyakit ini menjadi ketara melalui pemendapan sistina sebagai karang ginjal (kalkulus) yang mungkin menyumbat saluran urinari.</i></p> <p>Now I'll read my translation against the original (reads sentence by sentence - first the English sentence and then the Malay translated version, and makes almost no changes).</p>	<p>Analysing expressions - dividing sentence into phrases and tries to tackle difficult expressions - comes up with most appropriate equivalent term in Malay.</p> <p>Planning</p> <p>Translating</p> <p>Planning-makes a decision.</p> <p>Reads in English</p> <p>Analyses using clauses - to make translation easier</p> <p>Elaboration - explaining why "stones" are translated as <i>karang</i> based on subject's visual perception or imagery of them.</p> <p>Repeats phrase from earlier read sentence in English - thinks and translates into Malay.</p> <p>Tells of how the phrase can be translated - has two options. Explains meaning of the term "urinary"- shows that she knows her stuff. Explains vividly how the stones can block the flow of the urine.</p> <p>Translating</p> <p>Performance evaluation - final reading again of source text in English followed by the translated text in Malay - shows satisfaction with her translation.</p>
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APPENDIX H 2

CASE TWO: The next think-aloud protocol (TAP) is by a male lecturer at the Department of Zoology, Faculty of Science, University of Malaya. He has four years of experience in translating. He has translated three Science books.

Source Text in English	Final translated version in Malay
<p style="text-align: center;">TEXT ONE</p> <p>The tissues that produce and release hormones in animals are termed endocrine tissues. The hormones are secreted directly into the blood, which then transports them to other parts of the body.</p> <p>Hormonal control mechanisms have been found in a variety of invertebrates; those in insects have been most extensively studied. In invertebrates the nervous system and endocrine functions are usually intimately associated. In insects the brain produces a brain hormone that stimulates glands in the prothorax to secrete ecdysone, which induces molting. Levels of juvenile hormone, which is secreted by glands closely associated with the brain, determine whether the larva molts into another larval stage or to a pupa or adult.</p>	<p style="text-align: center;">TEKS SATU</p> <p><i>Tisu yang menghasilkan dan merembeskan hormon-hormon dalam haiwan disebut sebagai tisu-tisu endokrin. Hormon adalah dirembeskan secara langsung ke dalam darah yang kemudiannya diangkut ke bahagian-bahagian badan yang lain.</i></p> <p><i>Mekanisme pengawalan hormon telah ditemui dalam pelbagai haiwan invertebrata. Hormon yang terdapat dalam serangga adalah yang paling banyak dikaji. Dalam haiwan invertebrata didapati sistem saraf dan fungsi endokrin adalah sangat berkait atau berhubung rapat. Dalam serangga otak menghasilkan hormon otak yang akan merangsang kelenjar-kelenjar dalam protoraks untuk merembeskan hormon ecdison. Hormon ecdison akan mengaruh proses penyalinan kulit. Hormon juvenil dirembeskan oleh kelenjar yang berhubungkait dengan otak. Aras hormon juvenil ini akan menentukan sama ada larva melakukan salin kulit menjadi peringkat larva seterusnya atau menjadi pupa atau dewasa.</i></p>
<p style="text-align: center;">TEXT TWO</p> <p>The earth contains a large number of metals which are useful to man. One of the most important of these is iron. Modern industry needs considerable quantities of this metal, either in the form of iron or in the form of steel. A certain number of non-ferrous metals, including aluminium and zinc, are also important, but even today the majority of our engineering products are of iron or steel. Moreover, iron possesses magnetic properties which have made the development of electrical power possible.</p>	<p style="text-align: center;">TEKS DUA</p> <p><i>Bumi mengandungi berbagai jenis logam dan logam ini sangat berguna kepada manusia. Salah satu daripada logam yang paling penting ini adalah besi. Industri moden memerlukan kuantiti logam yang agak banyak (considerable quantities) sama ada tanya dalam bentuk besi atau besi keluli atau keluli sahaja. Terdapat beberapa jenis logam yang bukannya besi, iaitu aluminium dan zinkum. Aluminium dan zinkum juga penting. Walaubagaimanapun, sebahagian besar daripada hasil kejuruteraan sekarang ini menggunakan besi dan juga keluli. Tambahan lagi, besi mempunyai sifat magnet yang menyebabkan pembentukan tenaga bagi elektrik itu dapat dijalankan atau dihasilkan.</i></p>

Think-Aloud Protocol (TAP) transcribed	Analysis of TAP by researcher
<p>This paragraph needs to be translated. First I'll get ready my dictionary, and terminology books that I'll need for my translation so that I can concentrate on my translation without having to search for them while translating. First I'll read the paragraph first to get an idea of what is being conveyed by the writer (reads paragraph loudly). In this case the first sentence (reads first sentence- The tissues that produce and release hormones in animals are termed endocrine tissues). The author means that the hormones, that is, the tissues that produce the hormones in the body (thinks and says I've understood the meaning of the sentence). Now that I know the meaning in my head, I shall translate it using my own words in Malay so that the original meaning is not lost. I do not believe in word-for-word translation as this is not good. Now that I have got the meaning right, I use two methods, that is, either I type straight into my computer or I write it down. Now, I shall write down my translation (reads and writes down first sentence in Malay) - <i>Tisu yang menghasilkan dan merembeskan hormon-hormon dalam haiwan disebut sebagai tisu-tisu endokrin</i>. Next, we see the second sentence in English (reads the sentence loudly- The hormones are secreted directly into the blood, which then transports them to other parts of the body). We get a picture that, is it because the hormones in the body and how they are released from the hormones into the blood, that is there is no channel? This sentence is rather long, so we can maintain it or break it into two stating that the hormones are secreted directly into the blood with no channel involved which are then transported to other parts of the body (translates the sentence and writes it down). <i>Hormon adalah dirembeskan secara langsung ke dalam darah yang kemudiannya diangkut ke bahagian-bahagian badan yang lain</i>. Now I'll read before proceeding to the next paragraph (reads translated version and is satisfied – smiles and nods). The first sentence in the second paragraph (reads - Hormonal control mechanisms have been found in a variety of invertebrates; those in insects have been most extensively studied)</p>	<p>Planning - understands task. Planning and organising – making and implementing decisions - getting ready resource materials - thinks of benefits of this.</p> <p>Planning and organising-makes and implements decisions</p> <p>Reads in English from source text</p> <p>Summarising – paraphrasing</p> <p>Tells of his own beliefs on how to translate- focuses on conveying the meaning of the text.</p> <p>Tells of process of documenting translation.</p> <p>Planning-making and implementing decisions</p> <p>Analysing and reasoning: translating</p> <p>Planning</p> <p>Reads source sentence in English</p> <p>Comprehension of meaning in sentence – using own imagery and questions for clarification</p> <p>Problem identification - explains of difficulty of handling a long sentence – thinks and comes up with a solution –</p> <p>Comprehension monitoring - understands meaning and plans to translate it clearly</p> <p>Analysing and reasoning: translating</p> <p>Production monitoring - checks translated sentence in Malay against original in English</p> <p>Planning</p> <p>Reads in English</p>

<p>This is rather long, so I'll break it up into two sentences. I never translate word-for-word as it is bad. I prefer understanding the sentence first before translating. Thus, my translation for the first sentence would be:</p> <p><i>Mekanisme pengawalan hormon telah ditemui dalam pelbagai haiwan inveterbrata. Hormon yang terdapat dalam serangga adalah yang paling banyak dikaji. I don't like to make long sentences using connectors such as "dimana, yang mana etc." because the meaning will not be clear. The next sentence (reads it - In invertebrates the nervous systems and endocrine functions are usually intimately associated) will be translated as :</i></p> <p><i>Dalam haiwan invertebrata, didapati sistem saraf dan fungsi endokrin adalah sangat berkait/berhubung rapat. The next sentence (reads - In insects the brain produces a brain hormone that stimulates glands in the prothorax to secrete ecdysone, which induces molting) is also long so I'll break it into two simple sentences.</i></p> <p><i>Dalam serangga, otak menghasilkan hormon otak yang akan merangsang kelenjar-kelenjar dalam protoraks untuk merembeskan hormon ekdison. Hormon ekdison akan mengaruh (induce) proses penyalinan kulit.</i></p> <p>The last sentence is very long (reads it- Levels of juvenile hormone, which is secreted by glands closely associated with the brain, determine whether the larva molts into another larval stage or to a pupa or adult). I shall break it into two sentences also. My translation :</p> <p><i>Aras hormon juvenil/ juwana yang dirembes oleh kelenjar yang berhubungkait dengan otak akan menentukan sama ada larva melakukan salin kulit menjadi peringkat larva lain atau menjadi pupa atau dewasa.</i></p> <p>In this translation (reads the above) it seems that the gland controls the molting whereas in the source text it is the invertebrate hormone that controls the molting process. I have to make this point in my translation clear, so now I shall produce my second version which is:</p> <p><i>Hormon juvenil dirembeskan oleh kelenjar yang berhubungkait dengan otak. Aras hormon juvenil ini akan menentukan sama ada larva melakukan salin kulit menjadi peringkat larva seterusnya atau menjadi pupa atau</i></p>	<p>Problem identificaton -notices difficulty – suggests solution. Tells of his own beliefs on how to translate based on his past experience</p> <p>Analysing and reasoning: translating</p> <p>Tells of his own belief in translating and gives reasons for it.</p> <p>Planning Reads in English</p> <p>Analysing and reasoning: translating</p> <p>Planning Reads in English</p> <p>Problem identification: long sentence. Solution- breaks long sentence into two to ease translation</p> <p>Analysing and reasoning: translating</p> <p>Problem identification Reads sentence in English</p> <p>Finds solution: divides long sentence into two to ease translation task</p> <p>Analysing and reasoning: translating</p> <p>Problem identification: reads translated version and realises meaning of original text has been conveyed wrongly- acknowledges mistake. Solution: realises that he must translate again and makes a decision to do so</p> <p>Translates earlier version again to convey accurate meaning.</p>
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dewasa.

Here the meaning comes out clear that it is the invertebrate hormone that controls the molting process and not the gland. I'll read the whole translated version again (reads and is satisfied – smiles and nods).

TEXT TWO

The first sentence (reads - The earth contains a large number of metals which are useful to man.) means that the earth contains metals and metals are useful to man. This can be translated as:

Bumi mengandung berbagai jenis logam dan logam ini sangat berguna kepada manusia.

The next two sentences (reads - One of the most important of these is iron. Modern industry needs considerable quantities of this metal, either in the form of iron or in the form of steel) are straightforward and can be translated as:

Salah satu daripada logam yang paling penting ini adalah besi. Industri moden memerlukan kuantiti logam yang agak banyak (considerable quantities) samada ianya dalam bentuk besi atau dalam bentuk keluli. The next sentence is rather long (reads from source text- A certain number of non-ferrous metals, including aluminium and zinc, are also important, but even today the majority of our engineering products are of iron or steel), so I'll break it into two sentences. My translation will read:

Terdapat beberapa jenis logam yang bukannya besi, iaitu aluminium dan zinkum. Aluminium dan zinkum juga penting. Walaubagaimanapun, sebahagian besar daripada hasil kejuruteraan sekarang ini menggunakan besi dan juga keluli.

The last sentence is simple (reads - Moreover, iron possesses magnetic properties which have made the development of electrical power possible.) I don't have to break it into two sentences.

Tambahan lagi, besi mempunyai sifat magnet yang menyebabkan pembentukan tenaga bagi elektrik itu dapat dijalankan atau dihasilkan.

I shall read the whole text now (reads and is satisfied)

Claims that the correct meaning has been conveyed.

Performance evaluation - reads translated version as a whole and is satisfied with performance (as perceived by researcher).

TEXT TWO

Planning. Reads source text in English

Comprehends meaning via paraphrasing

Analysing and reasoning: translating

Planning

Reads sentence in English

Ability evaluation – claims sentences seem easy to be translated.

Analysing and reasoning: translating

Problem identification – a very long sentence.

Reads in English

Solution – divides sentence into two

Analysing and reasoning: translating

Ability evaluation - tells of simplicity of sentence

Reads in English

Analysing and reasoning: translating

Performance evaluation - reads whole translated version and is happy with his performance

APPENDIX H3

CASE THREE: The third Think-Aloud Protocol (TAP) is by a lecturer from the Department of Pharmacy, Faculty of Medicine, University of Malaya.

Source Text in English (excerpt taken from <i>Pathology and Therapeutics for Pharmacists - A basis for clinical pharmacy practice</i> by Russel J. Green et al.)	Final translated version in Malay
<p>CHILDHOOD ASTHMA</p> <p>Young children present special problems in diagnosis and treatment. The emotional response of the child and the parents to the knowledge that they have a chronic disease, and the loss of time from school are also important, so careful counselling of the child and its parents, siblings and teachers is essential.</p>	<p><u>ASMA DIKALANGAN KANAK-KANAK</u></p> <p>Kanak-kanak kecil lazimnya memperlihatkan masalah diagnosis dan rawatan yang khusus.</p> <p>Gerak balas emosi kanak-kanak tersebut (dan ibubapa) setelah diberitahu bahawa mereka mempunyai penyakit kronik serta kehilangan masa daripada sekolah adalah juga penting. Oleh yang demikian, kaunseling terhadap kanak-kanak dan ibubapa mereka, adik beradik dan guru-guru adalah penting dan dilakukan dengan berhati-hati.</p>

Think-Aloud Protocol transcribed	TAP analysed by researcher
<p>Actually, I'm not in the mood to translate at all this afternoon, but anyway, I'll just do it. You know, I often translate the forms for the pharmaceutical offices. First, I'll read the whole paragraph on "Childhood Asthma" before translating so that I'll have a whole idea of it (reads source text). Now I'll translate sentence by sentence (translates first sentence after reading it again). The title first - Childhood Asthma, I'll translate :</p> <p>ASMA DIKALANGAN KANAK-KANAK</p> <p>Now, the first sentence (reads - Young children present special problems in diagnosis and treatment). I'll translate: <i>Kanak-kanak kecil lazimnya memperlihatkan masalah diagnosis dan rawatan yang khusus.</i></p> <p>I have used the word <i>khusus</i> for special.</p> <p>Now the second sentence (reads - The emotional response of the child (and parents) to the knowledge that they have a chronic disease, and the loss of time from school are also important, so careful counselling of the child and its parents, siblings and teachers is essential.) This sentence is very long, so I will have to break it down and make this long sentence into two sentences.</p> <p>The emotional response - <i>tindakbalas emosi</i> - in this context it should be <i>gerak balas</i> because <i>tindakbalas</i> refers to reaction as in chemicals. My translation would be <i>Gerak balas emosi kanak-kanak dan juga ibu-</i></p>	<p>Shares own affective internal feeling with researcher.</p> <p>Shows experience in translating.</p> <p>Planning and organising - making and implementing decision.</p> <p>Reading of source text in English</p> <p>Selective attention</p> <p>Planning- making decision to attend to title</p> <p>Translating</p> <p>Planning- making and implementing decision Reads in English</p> <p>Translating</p> <p>Explains an equivalent term used in Malay in her translation Planning- making and implementing decision Reads in English</p> <p>Problem identification - original sentence is long Solution - decides to divide it into two sentences to ease task of translation.</p> <p>Translates phrase by phrase - explains term chosen to show appropriacy in context of situation and culture of target readers.</p> <p>Translating</p>

<p><i>bapa setelah diberitahu mereka mempunyai penyakit yang kronik dan juga kehilangan masa dari sekolah adalah juga penting. Oleh yang demikian, kaunselling yang dilakukan kepada kanak-kanak (dan juga ibu-bapa), adik-beradik dan juga guru haruslah dilakukan dengan sebaik mungkin. (said out verbally).</i></p> <p>Finally, I'll write down my translation, making changes where necessary (see final-version in table above).</p> <p>Actually, I'm not in the right mood to translate as I have exam questions to prepare. Usually my method is to read the passage to be translated first, to get the feel of it and then only I translate. I don't translate word-for-word. Being a Malay, I have the intuitiveness of the language and upon further reading, I always refine my translated work. For example, tomorrow if I were to see this passage again, I might refine and do some adjustments to my translation.</p>	<p>Writes down final version of translation and is satisfied but feels that it can still be fine-tuned.</p> <p>Explains her mood – reason for her feeling as such.</p> <p>Explains her own beliefs on how to translate.</p> <p>Her edge in translating from English into Malay</p> <p>Believes in improving translated text further when given time to think it over.</p>
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APPENDIX H 4

CASE FOUR: The fourth think-aloud protocol (TAP) is by a PhD student at the Department of Zoology, Faculty of Science, University of Malaya. She has translated six short Science books from English into Malay and has two years of experience in translating.

Source text in English (Excerpt taken from M.B.V. Roberts. <u>Biology - A Functional Approach</u> . Great Britain: Cox and Wyman Ltd. London.)	Final translated version in Malay
<p style="text-align: center;">The Spermatozoon</p> <p>The structure of the human spermatozoon is now fairly well understood, thanks largely to the electron microscope. It is divided into five regions: head, neck, middle piece, tail and end piece. The head carries genetic material in a large nucleus that very nearly fills it. The nucleus is rich in DNA, which accounts for more than half the dry weight of the head. The amount of DNA present in sperm nuclei is half that found in somatic cells. This is because it is haploid, containing only half the full number of chromosomes. The nucleus is surmounted by a thin cap, the acrosome, which we shall see plays an important part in fertilisation.</p> <p>The rest of the spermatozoon is concerned with propulsion. Running down the centre of the middle piece and tail is an axial filament consisting of two central fibres surrounded by nine peripheral ones, the famous 9+2 structure typical of cilia and flagella. The sperm tail is thus a modified flagellum. By lashing from side to side, it propels the spermatozoon in the liquid medium through which it has to swim before reaching the egg.</p>	<p style="text-align: center;">Sperma</p> <p>Struktur sperma manusia kini banyak difahami kerana kaedah yang dijalankan menggunakan mikroskop elektron. Ia terbahagi kepada lima bahagian iaitu kepala, leher, bahagian tengah, ekor dan bahagian hujung. Nukleus besar memenuhi hampir keseluruhan bahagian kepala. Nukleus kaya dengan DNA. Berat DNANYA melebihi separuh daripada berat kering kepala. Jumlah DNA yang terdapat di dalam nukleus sperma adalah tetap. Jumlahnya separuh daripada jumlah DNA dalam sel somatik. Ini adalah kerana ia berbentuk haploid dan mengandungi hanya separuh bilangan kromosom. Bahagian hadapan nukleus pula dilitupi oleh lapisan nipis yang dipanggil akrosom. Akrosom memainkan peranan penting dalam persenyawaan.</p> <p>Bahagian lain sperma berfungsi dalam pergerakan. Disepanjang pusat, dibahagian tengah dan ekor terdapat struktur yang disebut sebagai filamen aksial. Filamen aksial ini terdiri daripada dua gentian pusat yang dikelilingi oleh 9 gentian periferti, menurut struktur biasa 9+2 silium dan flagelum. Oleh itu, ekor sperma dikatakan sebagai flagelum terubahsuai. Sperma berenang dengan melibaskan ekornya dari sisi ke sisi dalam medium cecair untuk sampai ke telur.</p>
<p style="text-align: center;">TEXT TWO</p> <p>There are a number of methods of joining metal articles together, depending on the type of metal and the strength of the joint which is required. Soldering gives a satisfactory joint for light articles of steel, copper or brass, but the strength of a soldered joint is rather less than a joint which is brazed, riveted or welded. These methods of joining metal are normally adopted for strong permanent joints.</p>	<p style="text-align: center;">TEKS DUA</p> <p>Terdapat berbagai cara menyambungkan bahan logam. Cara yang digunakan bergantung kepada jenis logam dan kekuatan sendi yang diperlukan. Sambungan pateri boleh digunakan pada logam ringan seperti keluli, kuprum atau tembaga, tetapi ketahanan atau kekuatan sendi yang dipateri adalah kurang berbanding dengan sendi yang di brazen, riveted atau welded. Cara-cara penyambungan logam begini biasanya digunakan bagi memperoleh sendi yang kuat.</p>

Think-Aloud Protocol transcribed	Analysis of TAP by Researcher
<p>I'm going to translate something from a basic Biology Book called Biology - A Functional Approach by M.B.V. Roberts. First, I'll read through the whole passage and then go sentence by sentence (reads passage loudly). So, now I've a rough idea of what the text is about. It's an explanation of the spermatozoon, mainly the structure of the spermatozoon. Now I'm going to translate sentence by sentence. The first sentence (reads- The structure of the human spermatazoon is now fairly well understood, thanks largely to the electron morcroscope.)</p> <p>What they mean to say here is they found out a lot about the human spermatozoon from studies done with the electron microscope, so that is basically what they mean to say, so how would I translate it is: "Struktur sperma manusia kini banyak difahami" - how do I incorporate the word 'electron microscope'? <i>melalui kajian elektron mikroskop.</i></p> <p>The next sentence (reads it "It is divided into five regions: head, neck middle piece, tail and end piece.") this is fairly straightforward " <i>Ia terbahagi kepada lima bahagian iaitu kepala, leher, bahagian tengah, ekor dan bahagian hujung.</i> The next sentence (reads it -" The head carries genetic material in a large nucleus that very nearly fills it." The nucleus is so big that it fills up all of the head. So I would say " <i>Bahagian kepalanya mengandungi nukleus besar yang memenuhi hampir keseluruhan ruang kepala.</i> The next sentence " The nucleus is rich in DNA, which accounts for more than half the dry weight of the head." Now this is a bit tricky. I have to translate it well so that people won't get confused....hang on " <i>Nukleusnya kaya dengan DNA dan kandungan nukleusnya, maaf kandungan DNAnyanya terdiri daripada separuh berat kering kepalanya.</i> Is it okay if I just translate orally and then only I shall write? (researcher agrees). I think I may have to go back and alter that again. I'm not satisfied but I'll proceed. The next sentence, "The amount of DNA present in</p>	<p>Tells about task required to perform</p> <p>Planning and organization- makes and implements decision. Reads whole source text and understands content. Summarises content of passage</p> <p>Planning and organization- selective attention. Reads in English</p> <p>Comprehends meaning by paraphrasing</p> <p>Translates Comprehension monitoring - pauses in translation - questions on how to insert a word – thinks and translates</p> <p>Planning Reads in English Ability evaluation - finds it easy</p> <p>Translates Planning</p> <p>Reads English sentence Comprehension - paraphrasing</p> <p>Translates Planning</p> <p>Reads in English Finds it challenging - decides to go slow Empathising with others Translates</p> <p>Asks researcher to allow her to translate orally first before writing down final version. Shows dissatisfaction of earlier translation but will improve on it later. Reads in English Planning Problem identification: realises sentence</p>

sperm nuclei is constant, and is half that found somatic cells." This is rather long and I shall have to break it up into two sentences, so that students will not find it confusing.

"Kandungan DNA dalam nukleus sperma adalah tetap. Kandungannya separuh daripada kandungan DNA didalam sell somatik." By making two sentences, the meaning is clearer

The next sentence " This is because it is haploid, containing only half the full number of chromosomes." My translation "Ini adalah kerana nukleus sperma berbentuk haploid iaitu ia mengandungi separuh dari jumlah kromosom." The next sentence

" The nucleus is surmounted by a thin cap, the aerosome, which we shall see plays an important part in fertilisation." This marks the end of the first paragraph. The translation: "Terdapat suatu lapisan nipis dihadapan nukleus iaitu akrosom." I think I'll break this into two sentences. Akrosom memainkan peranan penting dalam persenyawaan..

I would rather have short sentences because this is a simple book for beginners so that they don't get too confused because of the long sentences and the way, you know you put in Malay is different.

Next, we have "The rest of the spermatozoon is concerned with propulsion." "Bahagian lain spermatozoa (hesitates, how do I say "is concerned"?) terlibat dengan pergerakan." Next sentence "Running down the centre of the middle piece and tail is an axial filament consisting of two central fibres surrounded by nine peripheral ones, the famous 9+2 structure typical of cilia and flagella." Wow! that's a mouthful. I think I'll need to break it up again. I would say (reads sentence twice again) "Disepanjang bahagian tengah sperma terdapat sebuah filamen aksial yang terdiri daripada dua (central fibres) - gentian fiber tengah yang dikelilingi oleh sembilan gentian periferi. Gentian ini mengikut struktur terkenal 9+2 silia dan flagella. The thing is with English to Malay translation, we have to be very careful, sometimes I have to maintain the word "flagella" or the majmuk - or what do you call it - yes plural form - maybe

is too long. Solution - decides to divide it into two to ease task of translation Shows empathy for target readers.

Translates

Planning

Reads in English

Translates

Explains benefit of dividing long sentence into two

Planning

Reads source sentence in English

Translates

Planning

Makes a speech act to denote end of a paragraph - takes note.

Translates - suddenly decides that it is too long and decides to divide it into two sentences.

Translates

Tells of her own belief in translating - gives reasons to support her belief

Planning

Reads in English. Hesitates while translating - questions on how best to translate a phrase - thinks and comes up with an idea and continues translation.

Planning.

Reads in English

Problem identification: sentence is too long. Solution decides to divide into two. Repetition: rereads sentence in English to grasp the meaning then translates.

Pauses, thinks and manages to find equivalent term in Malay and continues translating.

Problem-identification: tells of precaution to take while translating-problem with plurality - marked differently in Malay

<p>banyak flagelum. I have to check with the terminology book. The next sentence "The sperm tail is thus a modified flagellum." Oleh kerana ini, ekor sperma dikatakan sebuah flagellum yang terubahsuai.</p> <p>The next sentence "By lashing from side to side, it propels the spermatozoon in the liquid medium through which it has to swim before reaching the egg." I'll translate "Dengan menggerakkan ekornya dari sisi ke sisi, sperma berenang didalam medium cecair untuk sampai ke telur. This is the end of the second paragraph. Now, I'll write down my translation (translates sentence by sentence and makes a few changes from oral version). Now, I shall read the whole translated version again (reads and is satisfied - see table above for final translated written version in Malay).</p>	<p>Realises need for resourcing Planning Reads in English Translates</p> <p>Planning Reads in English Translates</p> <p>Notes end of second paragraph Planning and organizing</p> <p>Performance evaluation: revises and checks final translation after writing it down and shows satisfaction (by smiling and nodding of head as perceived by researcher).</p>
<p><u>Comments Passed After Translating Passage</u></p> <p>Usually, after translating, I read the whole passage twice again to ensure that the language flow is right. For example if there are two same words like <i>dan</i> and <i>dan</i>, I change one to <i>serta</i> so that the sentence sounds better. I always translate as though I am explaining something to someone. I usually get a colleague of mine to read the translated version to get feedback. In English, one can twist and turn a sentence and the meaning is still there but in Malay, this is not possible and therefore shorter sentences are the solution to long English sentences. I have used the term "<i>sperma</i>" for "spermatozoon" and have kept it consistent throughout my translation. Other words which I need to check in the terminology list which I have not brought here are flagella and silium. Other difficult phrases included 'running down the centre', "large nucleus that very nearly fills it."</p>	<p>Reflections on the translation process by the participant</p>

TEXT TWO	TEKS DUA
<p>This is a technical text. I'll read it first to get an idea (reads loudly). Now what is soldering in Malay? - yes "<i>pateri</i>." Now, I'll translate sentence by sentence. The first sentence " There are a number of methods of joining metal articles together, depending on the type of metal and the strength of the joint which is required." I'll translate: Terdapat berbagai cara menyambungkan bahan logam. Cara-cara yang digunakan bergantung kepada jenis logam dan kekuatan sendi yang diperlukan. The next sentence " Soldering gives a satisfactory joint for light articles of steel, copper or brass, but the strength of a soldered joint is rather less than a joint which is brazed, riveted or welded." My translation would be:</p> <p><i>Sambungan pateri boleh digunakan pada logam ringan seperti keluli, kuprum atau tembaga, tetapi keutuhan atau kekuatan sendi yang dipateri adalah kurang berbanding dengan sendi yang di "brazed", "riveted" atau "welded" (I cannot translate brazed, riveted, or welded because I don't know the Malay equivalents but I'm sure these terms can be found in the terminology lists on engineering). The next sentence " These methods of joining metal are normally adopted for strong permanent joints." I'll translate : Cara-cara penyambungan logam begini biasanya digunakan bagi memperolehi sendi yang kuat.</i></p> <p>I'll read my translated version again (reads and is satisfied - smiles and nods).</p>	<p>Personal elaboration: notes technical text - genre. Planning and organisation. Questions himself for a term - thinks and finds its equivalent in Malay. Planning - selective attention. Reads the English sentence</p> <p>Translates</p> <p>Planning Reads sentence in English</p> <p>Translates</p> <p>Problem identification: inability to find equivalent terms for some words - resorts to using quotation marks and maintains English words- realises need to refer to terminology list by DBP - has a solution in her head. Planning Reads sentence in English</p> <p>Translates</p> <p>Performance evaluation: revises and checks own translation and shows satisfaction in completed translated task.</p>

APPENDIX H 5

CASE FIVE: The following think-aloud protocol (TAP) is by a male lecturer from the Pharmacology Department, Faculty of Medicine, University of Malaya. He has translated eleven Science books from English into Malay and has seventeen years of experience in translating.

Source Text In English	Translated Text In Malay
<p style="text-align: center;">Antimotility agents</p> <p>The main pharmacological agents which decrease motility are opiates (details in Ch. 31) and muscarinic-receptor antagonists (details in Ch. 6). Agents in this latter group are seldom employed as primary therapy for diarrhoea because of their actions on other systems; but small doses of atropine are used combined with diphenoxylate (see below).</p> <p>The action of morphine, the type-specific opiate, on the alimentary tract is complex and, furthermore, varies in different species. In man, morphine increases the tone and rhythmic contractions of the intestine but diminishes propulsive activity. Its overall effect is constipating. The pyloric, ileocolic and anal sphincters are contracted and the tone of the large intestine is markedly increased.</p> <p>The main opiates used in diarrhoea are codeine (a morphine congener), diphenoxylate and loperamide (both pethidine congeners used only for their actions in the gut). All have unwanted effects which include nausea, vomiting, abdominal cramps, drowsiness and dizziness. Paralytic ileus can also occur. They should not be used in young children.</p> <p>More than 3 000 000 people cross international borders each year. Many travel hopefully but come back ill, having encountered enterotoxin-producing <i>Esh. coli</i> or other organisms. Most infections are self-limiting and require only oral replacement of fluid and salt as detailed above, but loperamide reduces the frequency of passage of faeces and the duration of the illness.</p>	<p style="text-align: center;">Agen antikomotilan</p> <p><i>Agen farmakologi utama yang mengurangkan kemotilan adalah opiat (perincian diberi dalam bab 31) dan antagonis reseptor muskarinik (perincian diberi dalam bab 6). Agen dalam kumpulan kedua jarang digunakan sebagai terapi prima untuk diareja sebab tindakannya atas organ-organ lain. Walaubagaimanapun, dos atropin yang kecil digunakan bersamaan dengan diphenoxilate (lihat dibawah).</i></p> <p><i>Tindakan morfin opiat yang khusus terhadap jenis kepada trak alimentary adalah kompleks dan tambahan pula ia berbeza dalam spesies yang berlainan. Pada manusia, morfin meningkatkan tones dan pengecutan rithma oleh usus tetapi mengurangkan aktiviti pengunjurannya. Kesan keseluruhannya adalah menyebabkan sembelit. Spinkter pilorik, illokolik dan anus dikecutkan dan tones usus besar juga dikurangkan dengan ketaranya.</i></p> <p><i>Opiat utama yang digunakan dalam diareja adalah kodin (sejenis konjener morfin), difenoxilate dan loperamid (kedua-duanya adalah kongener pethidin yang digunakan hanya untuk tindakannya pada usus). Kesemuanya mempunyai kesan buruk yang termasuk loya, muntah, kekejangan otot perut , pening dan mengantuk. Kekejangan ileus boleh juga berlaku. Ia tidak boleh digunakan pada kanak-kanak.</i></p> <p><i>Lebih daripada tiga juta manusia menyeberangi sempadan antarabangsa setiap tahun. Ramai yang berharapan untuk menggembara tetapi kebanyakannya kembali dengan membawa penyakit -sesetengahnya bertembung dengan Esch coli yang boleh menghasilkan toksin atau pun organisma lain. Kebanyakan jangkitan adalah terhad dengan sendirinya dan hanya memerlukan penggantian cecair dan garam secara oral seperti yang diterpincikan diatas tetapi loperamide mengurangkan kekerapan laluan najis dan tempoh penyakit itu.</i></p>

Think-Aloud Protocol (TAP) transcribed	Analysis of TAP by Researcher
<p>This is my translation on a Pharmacology text – translated from the book by Rank, Dale and Little, Third Edition. The title of the book is <u>Pharmacology</u> page 399. Title is the gastro-intestinal tract – subtitle “Antimotility agents.” I’ll read the text in English.</p> <p>I’ll read the source text aloud first (reads the whole text that is to be translated). That is the text that I’m going to translate. Now, I’m going to translate line by line into Bahasa – what I’ll do is I will look at the English text and straightaway do my translation in Bahasa. Antimotility agents –</p> <p><u>Agen antikomotilan</u></p> <p>The first sentence – The main pharmacological agents which decrease motility are opiates (details in Ch. 31) and muscarinic-receptor antagonists (details in Ch. 6). <i>Agen farmakologi utama yang mengurangkan kemotilan adalah opiat (perincian diberi dalam bab 31) dan antagonis reseptor muskarinik (perincian diberi dalam bab 6).</i> The next sentence – Agents in this latter group are seldom employed as primary therapy for diarrhoea because of their actions on other systems;</p> <p><i>Agen dalam kumpulan kedua jarang digunakan sebagai terapi prima untuk diareja sebab tindakannya atas organ-organ lain.</i></p> <p>I’ll continue – but small doses of atropine are used combined with diphenoxylate (see below). <i>Walaupun bagaimanapun, dos atropin yang kecil digunakan bersamaan dengan diphenoxilate (lihat dibawah).</i> Okay that finishes the first paragraph. Now the next – The action of morphine, the type-specific opiate, on the alimentary tract is complex and, furthermore, varies in different species. <i>Jenis, sorry, sorry. Tindakan morfin opiat yang khusus terhadap jenis kepada trak alimentary adalah kompleks dan tambahan pula ia berbeza dalam spesies yang berlainan.</i> Next – In man, morphine increases the</p>	<p>Beginning of translation task.</p> <p>Reads the whole source text in English</p> <p>Plans and organizes – makes and implements decisions.</p> <p>Shows ability and automaticity in translation because of experience Reads in English</p> <p>Thinks and translates in Malay Plans Reads in English</p> <p>Thinks and translates into Malay</p> <p>Plans Reads sentence in English</p> <p>Thinks and translates</p> <p>Plans Reads in English</p> <p>Thinks and translates</p> <p>Speech act to mark the first paragraph Plans Reads sentence in English</p> <p>Comprehension monitoring: hesitates to correct himself</p> <p>Thinks and translates</p>

tone and rhythmic contractions of the intestine but diminishes propulsive activity. <i>Pada manusia, morfin meningkatkan tones dan pengecutan rithma oleh usus tetapi mengurangkan aktiviti propulsive- propulsive adalah pengunjurannya.</i> It's overall effect is constipating. <i>Kesan keseluruhannya adalah menyebabkan sembelit.</i> The pyloric, ileocolic and anal sphincters are contracted and the tone of the large intestine is markedly increased. <i>Spinkter pilorik, iliokolik dan anus dikecutkan dan tones usus besar juga dikurangkan dengan ketaranya.</i>	Plans Reads in English Thinks and translates Reads in English Thinks and translates Reads in English Thinks and translates
Now the next paragraph – The main opiates used in diarrhoea are codeine (a morphine congener), diphenoxylate and loperamide (both pethidine congeners used only for their actions in the gut). <i>Opiat utama yang digunakan dalam diarea adalah kodin (sejenis konjener morfin), difenoxilate dan loperamid (kedua-duanya adalah kongener pethidin yang digunakan hanya untuk tindakannya pada usus).</i>	Planning Reads in English Thinks and translates
Next – All have unwanted effects which include nausea, vomiting, abdominal cramps, drowsiness and dizziness. <i>Kesemuanya mempunyai kesan buruk yang termasuk loya, muntah, kekejangan otot perut , pening dan mengantuk.</i> Paralytic ileus can also occur. Paralytic ileus – <i>kekejangan – no – no...umm.</i> <i>Kekejangan ileus boleh juga berlaku.</i> They should not be used in young children. <i>Ia tidak boleh digunakan pada kanak-kanak.</i>	Plans Reads in English Thinks and translates Reads in English Comprehension monitoring: hesitates to think of correct term to use in Malay Reads in English Thinks and translates
Next – More than 3 000 000 people cross international borders each year. <i>Lebih daripada tiga juta manusia menyeberangi sempadan antarabangsa setiap tahun.</i> Many travel hopefully but come back ill, having encountered enterotoxin-producing <i>Esch. Coli</i> or other organisms. <i>Ramai yang berharapan untuk menggembara tetapi kebanyakannya kembali dengan membawa penyakit - sesetengahnya bertembung dengan Esch coli yang boleh menghasilkan toksin atau</i>	Planning – reads sentence in English Thinks and translates Reads in English Thinks and translates

<p><i>pun organisma lain. Most infections are self-limiting and require only oral replacement of fluid and salt as detailed above, but loperamide reduces the frequency of passage of faeces and the duration of the illness. Kebanyakan jangkitan adalah terhad dengan sendirinya dan hanya memerlukan penggantian cecair dan garam secara oral seperti yang diterpincikan diatas tetapi loperamide mengurangkan kekerapan laluan najis dan tempoh penyakit itu. That's all – that's how I translate – thank you.</i></p>	<p>Reads in English</p> <p>Thinks and translates</p> <p>Speech act to mark end of translation task.</p>
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APPENDIX I

LIST OF BOOKS TRANSLATED BY THE 50 TRANSLATORS WHO WERE PARTICIPANTS FOR THIS STUDY

(information that is missing was not provided by the participants)

YEAR	TITLE	PUBLISHER
-	- Gilluly et al, Principles of Geology	
-	- Hakikat organisasi	
-	- Insurance Law	
-	- Kerr, P.F. Optical Mineralogy	DBP
-	- Law of Negligence in Malaysia	
-	- Law of the Sea	
-	- Learning and Assessment in Mathematics	
-	- Linear Algebra	
-	- Proses dan kesan komunikasi massa. (translated by a team of 5)	DBP
1970	- Biology: A Functional Approach	
1984	- Analytical Chemistry	
1986	- Physical Chemistry	
1990	- Chemical Health and Safety	
1990	- Document on Canada: Economic Development	-
1992	- Articles in Courier	UN Publications
1992	- Economic planning for Pahang state government	
1992	- Katalog makanan kucing.	
1992	- Penelahan siri masa	DBP
1993	- Articles on fisheries in Malaysia	
1993	- Buku Sains Saya Tentang Air	
1993	- Buku Sains Saya Tentang Cahaya	
1993	- Buku Sains Saya Tentang Udara	
1993	- Buku Sains Saya Tentang Warna	
1993	- International seminar papers on Coop. Societies	
1993	- Kaedah Matematik Dalam Sains Fizikal	DBP
1993	- Kuang di hutan - Document for RTM	
1993	- Seminar papers for translation conference	
1994	- Kimia kayu padu	
1994-	- Various titles on sociocultural and anthropological	
1995	literature for Muzium Negara.	
1995	- Pembolehubah kompleks	UTM
1995	- Proposals for new courses- engineering and architecture	
1995	- Toxicology of Pesticides	
1996	- Amalan dimahkamah tinggi diOdgen	
1996	- Membuat gambar benda menakutkan	
1996	- Membuat gambar rahsia laut	
1996	- Outline of Fractures	
1996-97	- Malaysian folk tales	
1996-98	- Medical document for a private company	
1997	- Cabinet document for Ministry of Education.	
1997	- Hitchhiker's guide to the galaxy	
1997	- International papers on audio-verbal therapy	

- 1997 - Sekolah Bestari
- 1997 - Struktur dan pengecaman kayu-kayan Malaysia
- 1997 - The Philadelphia Experiment
- 1997 - Pendidikan Saikologi
- 1998 - Geography Ekonomi
- 1998 - Medical document for UKM
- 1998 - Teaching and Learning Mathematics
- 1998 - Travel documents of Frank Swettenham

NOTE: THERE ARE FEW BOOKS TRANSLATED FOR INSTITUTIONS OF HIGHER LEARNING