EXPLORING TRANSLATION METHODS IN ICT TERMINOLOGY FORMATION: NEWMARK'S TRANSLATION THEORY APPROACH

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Abstract

This study aims to examine the method of forming foreign terms in the glossary of terms related to the language of Information and Communication of Technology or abbreviated as ICT in textbooks. The main focus of this study is to find the most frequently used method in translating ICT terms referred to in Newmark's translation theory (1988) which are also in line with the guidelines for foreign-Indonesian term formation as guided by Pusat Bahasa (2007). This study used a qualitative method involving the collection and analysis of non-numerical data, such as words, texts, and concepts, to understand the process of translating and forming foreign terms in ICT textbooks. The focus of this method is on the interpretation and understanding of the meaning of the data collected. The data analysis of this study was carried out on various ICT terms found in English-Indonesian textbooks, with the aim of identifying the most frequently used translation methods and how the translation is in line with the efforts to standardize ICT terms. The results of this study's analysis indicated that several methods emphasized the original meaning of the source language (SL), that can be applied in translating English terms in ICT textbooks, such as literal translation, transference, through translation, and translation by providing text descriptions. The results of this study found that the absorption method is the most widely used method in the formation of foreign terms in ICT textbooks.

Keywords: ICT, english term, newmark's theory, translation.

INTRODUCTION

In an era of rapid technological development, the formation of terminology in the field of Information and Communication Technology (ICT) plays a crucial role in ensuring consistent and accurate understanding among user. (Kridalaksana, 1998) stated that terminology is a field of term formation that is closely related to the development of science and technology. According to him, the formation of new terms must follow the principle of clarity of meaning and regularity of form in accordance with the Indonesian system. His views are relevant in the translation of foreign terms into Indonesian, especially in the context of fields such as ICT that continue to develop. (Subakti et al., 2022) also provided his views on the development of new terms in Indonesian, especially in the formation of terms and terminology.

Along with the rapid development of technology, various new terms have emerged that enrich the ICT vocabulary. However, this development also creates difficulties in terms of translation, especially when these new terms are adopted into other languages. If not translated properly, these terms can cause confusion among users of the target language, or even cause distortion in the understanding of information. For example, technical terms such as "cloud computing," "machine learning," or "artificial intelligence" require a careful translation approach to ensure that the technical and functional meaning of the term can still be understood accurately.

Translating terminology in the field of ICT is a challenge for translators. Technical terms in ICT often carry very specific meanings and are closely related to the latest technological developments. In addition, these terms often do not have direct equivalents in the target language, which adds complexity to the translation process. (Baker, 2018) discusses various aspects of translation, including the concept of equivalence in various contexts, which is particularly relevant to the translation of technical terms such as ICT. Baker's approach to terminological translation emphasizes the importance of considering social and cultural contexts in addition to lexical meaning. (Echols, 2014) contributed to the development of vocabulary and terms in Indonesian, especially in the context of scientific and technological translation. However, based on the suitability of meaning, many ICT terms do not yet have an exact equivalent in Indonesian, although there has been an addition of vocabulary in various fields. For example, the term "merger" is translated into *"gabung usaha"*, but there are many other technical terms that have not undergone appropriate adaptation. Therefore, translators are required to be able to translate these terms accurately without changing the meaning or simplifying the concepts contained therein.

In the context of globalization, where technology plays a significant role in various aspects of life, the translation of ICT terms is becoming increasingly important. Accessibility of information across languages and proper understanding of technology depend heavily on the accuracy of terminology translation. (Pym, 2010) discusses various theories of translation that have developed, including those related to technical translation and terminology. In his work, he emphasizes that the translation process is not only about transferring the meaning of words lexically, but also adapting terms to the context of their use, especially in fast-changing fields such as information technology. Therefore, translators are not only required to understand the technological context in depth, but also to master various translation methods that can accommodate the nuances of terminology in the source language (SL) and target language (TL).

In line with that, exploration of appropriate translation methods is very important to maintain accuracy and consistency in the translation of ICT terms. Methods such as literal translation, transference, and through translation need to be explored further to ensure that the ICT terminology formed is not only technically relevant, but can also be used effectively in the local context. Thus, Indonesian can continue to develop and function as a language that is able to capture technical nuances and strengthen its identity as a modern and dynamic scientific language.

Accurate translation of ICT terminology can assist in the transfer of knowledge and technology between different countries and languages, as well as minimize the gap in understanding among technology users around the world. On the other hand, inaccurate translation can lead to misunderstandings that result in the wrong or ineffective use of the technology. Thus, this study highlights the importance of ICT term translation in supporting information accessibility and effective communication. This study also aims to explore the translation methods used in the formation of ICT terms, focusing on the approach proposed by Newmark in his translation theory. Through the analysis of ICT term translation, this study is expected to contribute to improving the quality of technical terminology translation, especially in the context of information and communication technology.

This research article aims to explore the translation methods used in the formation of ICT terms, with a particular focus on the application of Newmark's Translation Theory. In the context of translation, one of the relevant theories in explaining the translation method of ICT terms, (Newmark, 2003) distinguishes between two main approaches in translation, namely semantic and communicative translation. These two approaches form the basis for many methods used in translating foreign terms, especially in technical contexts such as ICT. This study also attempts to identify the most frequently used methods in translating ICT terms in textbooks and technical literature, such as literal translation, transference, and methods involving text description are some of the methods that are often used. These methods play an important role in ensuring that the original meaning of ICT terms is maintained in the TL.

This study is important because of the rapid development of technology and globalization, which demands consistent translation standards in ICT literature, especially in textbooks and educational materials. Accurate translation is not only important for cross-cultural understanding, but also in improving technological literacy for students and professionals in various countries. By using qualitative methods, this study is expected to contribute to the development of technical term translation strategies, as well as provide guidelines for translators and academics in handling complex terminology in the field of ICT, as well as improving the accuracy and effectiveness of ICT term translation.

LITERATURE REVIEW

Definition of translation according to experts, such as (Hoed, 2006), that translation is the process of transferring text from the SL to the TL by considering whether the text should be adapted (domesticated) or maintained its foreignness (foreignized) so that the reader is aware of the language of origin of the text. In (Nida & Taber, 2003) view, translation must convey the same meaning, even if the sentence structure or expression changes to suit the TL context. Nida further defines translation as the process of producing dynamic equivalence in which the target text has the same impact on the target reader as the source text had on the original reader. (Vinay et al., 1995)see translation as the act of transferring a text from one language to another while preserving the style and message of the original. They classify translation into two main methods, namely: direct translation includes the techniques of literal translation, borrowing, and calque; and oblique translation. Vinay defines Translation as the process of transforming a source text by borrowing linguistic structures or adapting meanings to ensure functional equivalence and cultural understanding in the TL.

In the world of translation, there is a theory developed by Newmark in 1988 that is one of the important foundations in understanding various translation approaches, especially when dealing with technical terminology such as in the field of Information and Communication Technology (ICT). According to Newmark, translation is the process of transferring meaning from a source text by paying attention to both semantic aspects (meaning of each word) and communicative aspects (understanding and acceptance by the target reader). Technical terms in ICT are often very complex and have specific connotations in the field of technology. Therefore, the approach taken to translate these terms requires high accuracy and precision so that the meaning is not distorted in the TL.

Newmark distinguishes two main approaches in translation, namely semantic translation and communicative translation. Semantic translation focuses more on the meaning and accuracy of the source text, while communicative translation emphasizes the understanding and experience of the reader in the TL. In the context of translating ICT terms, both of these approaches are very useful because they offer flexibility for translators to decide on the best method depending on the context and audience being faced. The important role of both Newmark's approaches underlies their use in this study, as explained in more detail below.

2.1. Translation

Newmark's translation theory provides a dualistic approach, where the translation process must choose between semantic or communicative translation according to the purpose and context of the translation. Newmark emphasizes the importance of flexibility in translation, especially when dealing with technical or cultural texts, where the translation must consider the audience and function of the text to ensure the most appropriate method. Translation theory according to Newmark mainly focuses on a systematic and practical approach in translating texts, especially in technical and scientific contexts. In his book A Textbook of Translation, (Newmark, 2003) divides translation into two main approaches, namely semantic translation and communicative translation. His theory attempts to bridge

the two interests in the translation process: maintaining the accuracy of the meaning of the source text and ensuring good readability and understanding for the TL reader.

2.1.1. Semantic Translation

The semantic approach emphasizes the importance of preserving the original meaning of the terms in the SL while taking into account the nuances and complexities of that language. In translating ICT terms, this is especially important to ensure that complex technical concepts are preserved and unchanged in the target language. In the context of ICT, where terms often have specific meanings related to technological developments, semantic translation ensures that the technical meaning is not changed or simplified in the TL. For example, terms such as "machine learning" or "cloud computing" require a very careful translation approach, so that the intended concept remains consistent between the SL and TL. This means that in semantic translation, the translated term should be kept as close as possible to its original meaning, even though its structure may be less natural in the TL.

2.1.2. Communicative Translation

On the other hand, the communicative approach aims to ensure that readers in the TL can easily understand the terms. This is especially important in the ICT context where readers may not be familiar with certain technologies or concepts. In this case, methods such as providing text descriptions or additional explanations are often used to clarify the meaning of terms that may be unfamiliar to the reader. For example, the term “machine learning” may require additional explanation in the TL to ensure that readers understand the basic underlying concepts. Communicative translation focuses more on comprehension and the resulting effect on the TL reader. In this approach, the focus is on how the translation can provide a clear and understandable message to the reader, although some of the original nuances of the text may be adjusted or changed to better align with the linguistic and cultural norms of the TL. In the ICT context, where readers often come from non-technical backgrounds, communicative translation may be necessary to ensure that complex technical concepts are well understood by a general audience.

2.2. Direct Translation

Newmark suggests several translation methods that are often used in translating foreign terms, including in the field of ICT. In the context of translation methods according to Newmark, there are some translation methods that are often used directly in translating ICT terms. Direct translation includes several types of translation methods that directly translate terms from the SL to the TL without much modification. The types of translation methods included in direct translation are:

2.2.1. Word to Word Translation

This method preserves the original word or term from the source language into the TL, which is essential for maintaining the accuracy of technical terms. A translation that attempts to maintain the structure of the SL while still producing a meaning that makes sense in the TL. This is often used for technical terms that have direct equivalents, such as "algorithm" which is translated as "*algoritma*", "database" is still translated as "*basis data.*" This is a form of translation in which every word of the SL is translated literally into the TL, preserving the most common word order and meaning. It is often used to understand the mechanics of the SL or as a first step in the translation process.

2.2.2. Transference

This method uses the original word from the SL without changing it, often applied to terms that do not yet have an equivalent in the TL. This method borrows terms from the SL without changing their form. Foreign terms are absorbed directly into the TL, as in the case of the term "internet" or "software," which are used in various languages without translation. Another example: "router" is still used in Indonesian because there is no adequate equivalent term.

2.2.3. Literal Translation

The term in the SL is translated literally into the TL. While this method can preserve the original meaning, in some cases it can cause the technical meaning to become unclear if applied without adjustment. In this method, the structure and meaning of the words in the SL are maintained as closely as possible, but adjusted so that the translation still makes sense in the TL. Literal translation is often used for technical terms that have direct equivalents in the target language. (Newmark, 2003: 45-46) stated that "this is often demonstrated as an interlinear translation, with The TL immediately below the SL words. The SL word-order is preserved and the words translated singly by their most common meanings, out of context. Cultural words are translated literally. The main use of word-for-word translation is either to understand the mechanics of the SL or to construct a difficult text as a pre-translation process." Example: "virtual machine" is literally translated as "*mesin virtual*."

2.2.4. Additional Description in Translation

In cases where a technical term does not have a direct equivalent in the TL, the translator may provide a longer text description to explain the term. For example, a term like "blockchain" may require additional description to convey the technological concept behind it to the reader. (Newmark, 1988, 91) also mentions that the couplet translation method combines elements of direct translation and other methods, such as providing a literal translation and additional explanations. For example, a technical term translated literally can be accompanied by additional descriptions to clarify its meaning. In addition, (Newmark, 1988, 84) through-translation or some other theory named by calque method. This method translated a phrase or term directly by translating its parts one by one. This is often done for the translation of organizational names or composite terms, for example: skyscraper is translated into "*pencakar langit*".

So far, direct translation focuses more on translations that retain the original elements of the SL with minimal modification, and this includes the fourth methods of translation above. These translation methods fall into the direct translation category according to Newmark because they attempt to maintain the original meaning of the SL and use direct or nearly direct equivalents in the TL.

2.3. Translation of the equivalence terms

Newmark's translation theory focuses on the equivalence of terms, especially in the context of technical and scientific translation. He discusses how translators must be careful in choosing the right equivalent for important terms, whether through literal translation, transference, or descriptive methods. The aim is to ensure that the terms are understandable to the TL reader without losing the original meaning of the source text, especially in the context of dynamic equivalence or functional equivalence (Newmark, 1988, 142).

2.4. Translation of Absorption Terms

This research supports the concept of absorption as expressed by Newmark, that absorbing foreign terms into Indonesian can be done based on five reasons: improving cross-language translation, facilitating understanding, maintaining consistency and accuracy, creating consensus, and avoiding negative connotations (Newmark, 1988, 130,161), as explained in more detail below.

2.4.1. Increasing Inter Translatability

Using foreign terms can facilitate the translation process between foreign languages and Indonesian in the future. This can help expand international communication and knowledge exchange (Newmark, 1988, 137). Absorbing foreign terms makes it easier to translate across languages in the future. For example, the term found in technological field, such as “software” is taken directly into Indonesian without any changes (transference), so that it can be used in an international context without confusion.

2.4.2. Facilitate Understanding

Foreign terms that are familiar to Indonesian readers can help them understand foreign texts more easily, because the terms are already familiar to them (Newmark, 1988, 117, 155, 185). Familiar foreign terms help readers understand the text more easily. An example is “modem”, which has been naturalized into Indonesian without losing its meaning. This strategy supports understanding because the term is often used in everyday contexts.

2.4.3. Consistency and Accuracy

Foreign terms that are absorbed into Indonesian may be shorter or more precise than their Indonesian equivalents. This can help avoid confusion or misinterpretation (Newmark, 1988, 97, 100, 187). Absorbed foreign terms are often more concise and precise than local equivalents, reducing the risk of misinterpretation. For example, “router” is absorbed directly rather than translated into a long term such as *pengarah jaringan*, for maintaining technical consistency.

2.4.4. Consensus Among Experts

If there are many synonyms in Indonesian for a foreign term, using the foreign term can facilitate agreement among experts (Newmark, 1988, 28, 37, 66). When there are many synonyms in the TL, the use of foreign terms can simplify consensus among experts. For example, “database” is more often used than local alternatives such as *basis data*, because it has become a standard term in information technology.

2.4.5. Avoid Negative Connotations

Foreign terms that are absorbed may not have the same negative connotations as their Indonesian equivalents. This can help avoid misunderstandings or negative reactions from readers (Newmark, 1988, 12). Application examples of the term "software" in English has been absorbed into Indonesian. This term is more widely known and used than its Indonesian equivalent of "*perangkat lunak*". This can facilitate the understanding of information technology texts written in English by Indonesian readers. Further, adopting foreign terms can avoid negative connotations that may arise from local equivalents. For example, the term “virus” is retained in the TL to maintain a neutral impression, compared to local terms that may have different associations.

2.5. Policy of on the Indonesian Terminology Formation Sectioning

This research study also refers to the guidelines for equivalence in the formation of foreign terminology through translation into Indonesian that have been formulated by (Pusat Bahasa, 2007), as explained in the following. (a) Translation does not have to be based on one word translated with one word. For example: software engineer – *ahli teknik perangkat lunak*, artificial intellingence – *kecerdasan buatan*. (b) Foreign term in positive form is translated into positive Indonesian term, while terminology in negative form is translated into negative term, for example: offline – *luring (tidak daring)*, cybersecurity – *keamanan siber*. (c) The word class of foreign terminology in its translation is maintained as much as possible in the translated terminology. For example: database (n) – *basis data* (n), to debug (v) – *men-debug* (v).

In addition, the process of absorbing foreign terminology, prioritizing its visual form, is carried out in the following ways: (a) absorption with adjustments to spelling and pronunciation, for example: system [ˈsistəm]→ *sistem*: the spelling of "system" is changed to "*sistem*" and the pronunciation is also adjusted to the Indonesian way of speaking. Program[ˈprō͵gram] → *program*: the spelling of program is maintained, but the pronunciation is adjusted to sound more natural in Indonesian. Module [ˈmäjo ol] → *modul*: the spelling of module is changed to *modul*, adjusting to the Indonesian spelling rules, and the pronunciation is also adjusted. (b) absorption with spelling adjustment without pronunciation adjustment. The spelling of foreign terms is adjusted to Indonesian, but the pronunciation remains close to the pronunciation of the SL (English). For example: design [dəˈzīn]→ *desain*: The spelling of design is adjusted to *desain*, but the pronunciation remains close to the English pronunciation. The other example, format [ˈfôr͵mat] → *format*: the spelling of format was directly absorbed into Indonesian, but the pronunciation still follows the original. Access [ˈak͵ses]→ *akses*: the spelling of access was changed to *akses*, but the pronunciation is still close to the original. (c) absorption without spelling adjustment, but with pronunciation adjustment. Foreign terms are absorbed without changing the spelling, but the pronunciation is adjusted to Indonesian. For example: laptop [ˈlap͵täp] → *laptop*: the spelling of laptop is maintained, but the pronunciation is adjusted to make it easier for Indonesian speakers to pronounce. (d) absorption without spelling and pronunciation adjustment. Foreign terms are absorbed in their entirety without changing the spelling or pronunciation, so that the term is adopted in its original form.

For example: internet [ˈin(t)ər͵net] → *internet*: the spelling and pronunciation of internet do not change. The process of absorbing foreign terms, especially in ICT terminology, includes varying degrees of adjustment to spelling and pronunciation. Some terms are absorbed with changes in spelling and pronunciation, while others only experience changes in spelling or pronunciation, and some are absorbed without any changes at all. This variation shows the flexibility of the Indonesian language in adopting foreign terms according to the communication needs and understanding of readers or listeners.

2.6. Combination of Translation and Absorption

Indonesian terminology can be formed by translating and absorbing foreign terminology at the same time. (a) Creation of terminology: the activities of scientists, cultural figures, & artists who work at the forefront of science, technology and art can spark concepts that have not existed before. New terminology to express the concept can be created according to the environment and characteristics of the field of activity. For example: the creation of the Indonesian terminology *"tebang pilih"* has entered the terminology treasury. (b) Standardization & codification of terminology: terminology that is selected through consolidation, translation, absorption, and creation is standardized through codification that seeks regularity of form according to the rules and customs of language use. This codification was achieved by establishing a spelling system, a grammar book, and one that recorded and established standard forms.

METHOD

This research method refers to (Creswell & Creswell, 2018) qualitative method, this study uses thematic analysis to explore the translation method of ICT terms. Qualitatively with the main data being e-data in the form of nouns and noun phrases sourced from English-language texts and Indonesian-language translated texts. The main data taken consisted of nouns and noun phrases, which were selected to identify translation patterns and strategies used. With a total of 113 nouns and 87 noun phrases, this study aims to analyze how these terms are translated from the source text into Indonesian. This section explained in detail how the research was conducted, from the steps taken to the details of the investigation. This section is especially important in this study that require detailed explanations of the interventions or tasks that the research subjects must perform. There are the various stages of the research, from preparation, implementation, to analysis and reporting of results, as explained in the following section.

3.2. Instrument(s)

This research procedure included an explanation of the tools and materials that relevant. The research instrument in this study is a collection of texts containing ICT terms from various sources, including educational textbooks in English and their Indonesian translations. The data were analyzed using a descriptive-qualitative approach, with the help of an online dictionary (Badan Pengembangan dan Pembinaan Bahasa, 2016) and an ICT glossary to evaluate the accuracy and consistency of the translation. In addition, there are also guidelines for the formation of foreign terms into Indonesian which were formalized by the Indonesian Language Center team, named Pusat Bahasa.

3.3. Procedures

This research includes methods used in data collection, as well as how the data was analyzed, as explained in the following.

3.3.1. Data Collected

Data were collected through observation of translations of various ICT terms, then analyzed based on three main classifications: word-for-word translation, positive and negative connotations, and word classes, and adjusted to the standardization of the Indonesian language center guidelines.

Data collection techniques are carried out through several stages, namely (a) observation of several candidate data, including: all translated terms in the ICT field in source books (SL and TL), observation of ICT term translations in the online dictionary (*KBBI*, 2023), (Badan Bahasa, 2016), and (https://dictionary.cambridge., n.d.). (b) collection of all terminology, both English terms and their translations in Indonesian. (c) organizing the terms that have been collected, classified, and organized sequentially in alphabetical order (from A - Z). (d) Data analysis, equivalencing translation terminology in English into Indonesia, and if terminology that does not have an equivalent in Indonesian will be checked for its equivalent based on the general guidelines for terminology that have been described in the literature review.

3.3.2. Data Analysis

This analysis will refer to the guidelines of PUPI set by (Pusat Bahasa & Departemen Pendidikan Nasional, 2007) regarding three main aspects of term translation, namely: (1) word-for-word translation, whether the term is translated literally or with a phrase equivalent. (2) Positive to positive and negative to negative, whether the polarity of the term is maintained in the translation. (3)

Preservation of word class, whether the word class (noun, verb, adjective) is maintained in the translation.

The analysis stage in this research data will also require support through several things stated in (Werghi et al., 2017)), including: (1) Context: translation of ICT terms is often influenced by the context of their use. The choice of translation method depends largely on the context in which the term is used. Sometimes, adjustments are needed to ensure that the translation can be understood well by the target readers. It meant, literal translations are not appropriate and adjustments need to be made to convey a more accurate meaning. (2) Term development: ICT terms continue to develop, and their translations can change over time. (3) Standardization: it is important to have clear and consistent translation standards to ensure uniform use of terms in various documents and communications. The guidelines from the Indonesian Language Center are very helpful in ensuring consistency and accuracy of translations of technical terms, especially in the ICT field.

3.3.3. Data Interpretation

The presentation of the results of the data analysis of this study is qualitatively descriptive as explained at the beginning, especially based on Creswell's (2018) approach, because the main focus is to explore the meaning and patterns that emerge from the data. However, according to the needs and complexity of the data, the use of tables, graphs, or charts is also needed to help support and clarify interpretations. The interpretation of qualitative data in this study has actually been explained descriptively, but tables and graphs are also used to clarify and visualize the data. The use of tables can provide additional structure and compare various terms and translation methods comprehensively, while graphs can be used to show the distribution or trend in the use of certain translation methods.

3.3.4. Data Validation

Process of reviewing and validating the interpretation results of ICT terminology research data against the policies and guidelines for standardizing the formation of foreign terms into Indonesian is carried out systematically by referring to the official guidelines set by *Badan Pusat bahasa*. This stage aims to ensure that the translation of ICT terms produced is in accordance with the linguistic principles applicable in Indonesia, including the principles of absorption, spelling adjustments, and the application of proper grammar.

The results of the interpretation of the ICT term translation data are re-analyzed and compared with the general guidelines for the formation of terms known as *Pedoman Umum Pembentukan Istilah* or *PUP*I and *Kamus Besar Bahasa Indonesia (kbbi.web.id)*. This guideline provided guidelines regarding the process of adopting foreign terms, such as how terms were absorbed with spelling adjustments (for example, "system" becomes "*sistem*") or how terms are absorbed without spelling adjustments (for example, "design").

In addition, this study examined whether the proposed translated terms are in accordance with the recommended pattern, such as avoiding the formation of terms that are confusing, unclear, or difficult for the general public to understand. Furthermore, the validation process involved a review by language expert and ICT expert to ensure consistency in the use of terms, as well as their application in technical contexts. Language expert evaluate whether the translated terms are in accordance with the norms of term formation in Indonesia, while ICT experts evaluate whether the terms maintained the correct technical meaning in the field of technology. This validation process also taken into account the cultural context and technological developments in Indonesia. Some foreign terms might not require a complete translation because they have become part of the everyday vocabulary of Indonesian language users, for example "software" or "internet." In this case, validation is carried out to decide

whether adopting the term directly without translation is more appropriate than adjusting the spelling or adapting the meaning.

The results of this review and validation are then used to improve and refine the interpretation of the data, so that the translation of ICT terms was not only in accordance with linguistic rules but also effective in conveying accurate and easily understood meaning in Indonesian.

FINDING & DISCUSSION

The presentation of data analysis results in the study places great emphasis on a structure that focuses on interpretation, in-depth description, and analysis of themes that emerge from the data findings based on the following classification.

4.1. *Identification on Main Themes*

The first finding based on classification (identification of main themes) using thematic analysis, each translation classification was identified as a main theme that revealed patterns of translation method used, as described in the following table.

Theme	Data-ICT term translation	Sub-theme
Theme 1: Word-for-Word Translation Based on the findings, some ICT terms were translated literally with a word-for-word and phrase approach.	"Software as a Service" was translated into "*perangkat lunak sebagai layanan*", where each word was translated according to its meaning in the target language context.	Combination of translation and adaptation: This pattern shows that word-for-word translation is often accompanied by adaptation to ensure clarity of meaning.
	"Internet of Things" became "*internet untuk segala (bendabenda)*", combining literal translation and adaptation to suit the local context.	
Theme 2: Positive to Positive and Negative to Negative Translation. In this finding, the positive and negative connotations of ICT terms were maintained.	"Open source" was translated into "*sumber terbuka*", maintaining the positive meaning of the term "open" as "*terbuka*." In contrast, Malware (Malicious software) was translated into "*perangkat lunak berbahaya*", maintaining the negative connotation.	Connotative Harmony: The emerging pattern shows the importance of maintaining connotative harmony in translation to avoid ambiguity.
Theme 3: Preservation of Word Class The analysis results show that some terms retain their original word class.	"debugging" (noun) is translated into "...", to debug (verb) into "...". This shows the importance of structural conformity between the source language and target language.	Word class structure: Preservation of word class shows an effort to ensure grammatical conformity in translation, minimizing changes in meaning.

<Table 2> Thematic Analysis Revealed Translation Method of ICT terms

4.2. Direct translation classification

Some findings of ICT term translation using the through translation method (calque-translation) according to Newmark, where each part of the term is translated directly as seen in the following table.

Source Language	*Target Language*	*Explanation*
cloud computing	komputasi awan	"Cloud" is translated to "*awan*," and "computing" to "*komputasi*."
Firewall	*tembok api*	"Fire" is translated to "*api*," and "wall" to "*tembok*."
Database	*basis data*	"Data" remains "*data*," and "base" is translated to "*basis*."
skyscraper page (in digital/website context)	*halaman pencakar langit*	"Skyscraper" is translated to "*pencakar langit*," and "page" to "*halaman*."
input device	*perangkat masukan*	"Input" is translated to "input/masukan," and "device" to "*perangkat*."
open source	sumber terbuka	"Open" is translated to "*terbuka*" and "source" translates to "*sumber*."
search engine	*mesin pencari*	"Search" is translated to "*pencari*" and "engine" to "*mesin*."

<Table 3> Through Translation of ICT terms

In the through translation method, parts of a term are translated directly into the TL, and the result is a term that can be understood in the context of the TL.

4.3. Interpretation and Thematic Result

Based on the classified findings, further interpretation was conducted to explore the relationships between themes. From the analysis, it is clear that the translation method is not only mechanical, but also adaptive, depending on the context of the term and the kontext of the TL. A term such as "Artificial Intelligence" which is translated into "*Kecerdasan Buatan*" showed a combination of a word-for-word approach with local adaptation to make it easier to understand. This analysis delves deeper into the meaning behind the patterns that emerge in the translation. This finding showed that the translation did not only focus on the appropriateness of the word, but also on how the TL readers would understand the term in their linguistic context.

In order to provide more structure and highlight some comparative data classifications in this study, tables are used as a very useful addition in presenting the results of the data analysis of this study mentioned in tabel 4 as follows.

ICT Term		Translation Methods
SL (english)	TL (Indonesian)	
Software as a Service (SaaS)	Perangkat Lunak sebagai Layanan	word for word + phrases

Internet of Things (IoT)	Internet untuk segala (benda-benda)	word for word + phrases
Artificial Intelligence (AI)	Kecerdasan Buatan	direct adaptation
Open source	Sumber terbuka	positive to positive,
Malware	Perangkat lunak berbahaya	negative to negative

<Table 4> Translation method classification

The results of the English ICT terminology data collection 117 data classified based on the method of translating the SL terms into Indonesian. In this study, several methods were found, including (1) direct translation, (2) absorption, (3) translation & absorption, (4) descriptive translation.

The direct translation method is carried out by equivalence English translation terminology into Indonesian by looking for its equivalent in the online dictionary (kbbi.web.id) from the English translation terminology data obtained a total of 117 data, 71 data were translated directly. English translation terminology that was translated directly into Indonesian can be seen in the following table 5.

Noun		*Phrase*	
Source Language	*Target Language*	*Source Language*	*Target Language*
File	*berkas*	Software	*Perangkat lunak*
Encryption	*enkripsi*	Hardware	*Perangkat keras*
Memory	*memori*	Network	*Jaringan*
Processor	*prosesor*	Cloud computing	*Komputasi awan*
Server	*peladen*	Interface	*Antar muka*
Algorithm	*algoritma*	Bandwidth	*Lebar pita*
Database	*basis data*	Firewall	*Tembok api*
Computer	*komputer*	Login	*Masuk*
Router	*penghala*	Update	*Pembaruan*
Malware	*perangkat perusak*	Backup	*Cadangan*
Spam	*sampah elektronik*	Debugging	*Pemecahan masalah*

<Table 5> Direct Translation of ICT terms

The direct translation strategy is carried out in translating English translation terminology because the terminology has its own equivalent in Indonesian. From the data above, all English terminology has its equivalent in Indonesian, for example, the noun "router" has the equivalent "*penghala*" in Indonesian. the word "malware" has the equivalent "*perangkat perusak*". all of these words have their own equivalents in Indonesian.

4.3.1. The Absorption Method Results

The absorption process in translating English translation terminology is the most common finding in this study. Of the 117 data obtained, 97 data used the absorption process. Some examples of data ICT terms that have undergone spelling adjustments in the translation process: are shown in the following table 6.

Source Language	Target Language	Explanation
Access	*Akses*	The word "access" was adopted by replacing the double "c" in the middle with "k," following the simpler Indonesian pronunciation rules without changing its basic meaning.
Protocol	*protokol*	The word "protocol" was adapted by replacing the letter "c" with "k," which is in accordance with Indonesian spelling rules. This also follows the simpler and more natural Indonesian pronunciation pattern.
Client	*klien*	The letter "c" in "client" was changed to "k," in accordance with the phonetic pronunciation in Indonesian. The letter "i" was retained, while the "e" at the end of the word was still pronounced.
Cache	*kache*	The word "cache" underwent a change by replacing the first letter "c" with "k," while the letter "ch" which is usually pronounced as "sh" in English, was adapted to "k," following the Indonesian pronunciation pattern.
Module	*modul*	The term "module" was simplified to "modul" by removing the letter "e" at the end of the word. This change is in accordance with the Indonesian spelling and pronunciation rules.
Data	*data*	remains the same, but adopted as a loan word
System	*sistem*	The word "system" was changed to "sistem" by removing the letter "y" and replacing it with "i," which is more in accordance with Indonesian spelling and pronunciation. This form is more consistent with the pattern of vowel usage in Indonesian.
Format	*Format*	adopted without changing meaning
User	user	sometimes adopted directly in some ICT contexts

<Table 6> Absorption of English Translation of ICT terms

These terms (in the table 6 above) have undergone spelling adjustments or have been adopted directly into Indonesian, in accordance with the rules for absorbing terms from foreign languages. This adjustment allows the words to be more in line with the structure and pronunciation of Indonesian.

The method of absorbing foreign terms in the translation of English formation because the right equivalent has not been found to replace the English glossary. That is why the method of absorbing English terminology is carried out. In the absorption process, several adjustments are made, such as adjustments to spelling and pronunciation. For example, the word "cache" has undergone a spelling adjustment to become "*kache*".

4.3.2. The Combination of absorption & Translation Method Results

Based on the 117 data obtained, 111 data were translated using a combined strategy of absorption and translation. This form of translation generally occurs because not all translation terminology in English has an exact equivalent. Here are some examples of translations of ICT phrases where not all words have direct equivalents in Indonesian, such as in the following table 7.

Source Language	*Target Language*	*Explanation*
computer network	*jaringan komputer*	The word "computer" does not have a direct equivalent in Indonesian, so it is still used by exchange spelling “c” into “k”, while "network" is translated as "*jaringan*."
mobile application	*aplikasi mobile*	The word "mobile" is directly adopted because there is no exact equivalent, while "application" is translated as "*aplikasi*."
data mining	*penambangan data*	The word "data" is still used without changes because it is directly adopted, while "mining" is translated as "*penambangan*."
cloud storage	*penyimpanan awan*	The word "cloud" is adopted as "awan," although in a technical context its meaning is not literal, and "storage" is translated as "*penyimpanan*."
digital marketing	*pemasaran digital*	The word "digital" is directly adopted, while "marketing" is translated as "*pemasaran*."
artificial intelligence	*kecerdasan buatan*	"Intelligence" is translated as "*kecerdasan*," while "artificial" is translated as "*buatan*."
virtual reality	*realitas virtual*	The words "virtual" and "reality" are maintained, with the order adjusted to follow Indonesian language rules.
internet of things	*internet untuk bendabenda*	The word "internet" is adopted directly, while "of things" is translated as "*untuk benda-benda*” (“for objects") although in practice it is often adopted as "Internet of Things" without translation.
machine learning	*pembelajaran mesin*	The word "learning" is translated as "pembelajaran," while "machine" is translated as "*mesin*."
cyber security	*keamanan siber*	The word "cyber" is adopted as "*siber*," following local rules, and "security" is translated as "*keamanan*."

<Table 7> Combined Methods of Absorption & Translation of ICT terms

As discussed above, this translation method generally occurs because one, two or more words in the English glossary have not found an exact equivalent to replace the words. In the table above, some words are adopted directly because there is no exact equivalent in Indonesian, while other words are translated according to the context or meaning in the TL. For example, in the phrase "cyber security" the word "cyber" has not been able to find an appropriate equivalent to replace it, while the word "security" is matched with the word “*keamanan*”. The same thing also happens in the phrase "virtual reality" which is translated as "*realitas virtual*".

Further, from the examples above, it can be seen that in the translation of ICT terms, a combination of several Newmark translation methods is often used. Factors such as context, level of technicality, and the existence of equivalent words in Indonesian will influence the selection of the

right translation method. Based on the data found from the table above, the term ICT is analyzed based on the Newmark translation method, as shown in the following table 8.

Source Language → Target Language	*Translation methods used*
computer network → *jaringan komputer*	in phrase "computer network" → *"jaringan komputer"* showned that "computer" is still used as an example of adaptation or borrowing, where a foreign term is directly adopted because there is no exact or more commonly used equivalent. While "Network" is translated into *"jaringan"* is an example of communicative translation, where the conceptual meaning is maintained, but the form is adapted to Indonesian.
mobile application → *aplikasi mobile*	This showned "mobile" is directly adopted, just like "computer", this is an example of adaptation. "Application" is translated into *"aplikasi"* is also an example of adaptation, because *"aplikasi"* is already an established term in Indonesian to refer to "application".
data mining → *penambangan data*	"Data" is still used as an example of adaptation. "Mining" is translated into *"penambangan"* is an excellent example of communicative translation, because *"penambangan data"* gives a clear picture of the process of extracting information from data.
cloud storage → *penyimpanan awan*	"Cloud" is adopted into *"awan"* is an example of creative adaptation, although "cloud" in this context has a metaphorical meaning. "Storage" is translated into *"penyimpanan"* is an example of a simple and effective communicative translation.
digital marketing → *pemasaran digital*	"Digital" is adopted directly as an example of adaptation. "Marketing" is translated into *"pemasaran"* is an example of a commonly used communicative translation.
artificial intelligence → *kecerdasan buatan*	"Intelligence" is translated into "kecerdasan" is an example of an accurate communicative translation. "Artificial" is translated into *"buatan"* is also an example of a clear communicative translation.
virtual reality → *realitas virtual*	"virtual" and "reality" are retained. This is an example of adaptation or borrowing, where a foreign term is adopted directly because there is no exact or more commonly used equivalent in this combination.
internet of things → *internet untuk benda-benda*	"Internet" is adopted directly is an example of adaptation. "Of things" is translated into *"untuk segala (benda-benda)"* is an example of a literal translation, but in practice it is often adopted as "Internet of Things" without translation.
machine learning → *pembelajaran mesin*	"Learning" is translated as "pembelajaran": This is an example of a proper communicative translation. "Machine" is translated into "mesin": This phrase is also a clear communicative translation.
cyber security → *keamanan siber*	"Cyber" is adopted as *"siber"*: This is an example of adaptation or borrowing that has become part of modern Indonesian. "Security" is translated into *"keamanan"*: This phrase is a commonly used communicative translation.

<Table 8> A Combination of Several Newmark Translation Methods of ICT Terms

4.3.3. The Addition of Description Method of Translation Results

The descriptive translation method is the least method, because out of 117 data only 6 data use this method. This method is used because in translating an English glossary the translator provides some information related to the meaning of the word. In this method, the translator adds a description

or explanation so that the TL reader understands the meaning contained in the term or phrase. Here are some examples of the application of the descriptive text method in this data research found, as seen in the following table 9.

Source Language	*Target Language*	*Explanation*
source code	*kode sumber*	Source code → The source code used to create computer programs. If translated directly as *"kode sumber"*, the meaning may be less clear to the lay reader. Therefore, the additional description "used to create computer programs" helps clarify the meaning.
cloud computing	*komputasi awan*	Cloud computing → The use of remote servers that can be accessed via the internet to store and manage data. A direct translation of *"komputasi awan"* may not be clear enough. With the additional description, the target language reader understands that this term relates to the use of remote servers via the internet.
firewall	*tembok api*	Firewall → A security system that blocks unauthorized access to a computer network. A direct translation of a *"tembok api"* does not describe the technical function of the term. Additional explanation is needed so that the reader understands that this is a security system.
cookie	*data kecil*	Cookie → Small data stored by a website on a user's computer to track online activity. In the context of technology, the term "cookie" has a specific meaning. Adding a description clarifies its function compared to simply translating it as "cake."
machine learning	*pembelajaran mesin*	Machine learning → Technology that allows computers to learn from data without explicit programming. If translated directly as *"pembelajaran mesin"*, the meaning may not be immediately clear to all readers. Adding a description of the technology helps clarify this concept.
open source	*sumber terbuka*	Open source → Software whose source code is publicly available and can be modified by anyone. A direct translation as *"sumber terbuka"* may not be enough to explain its nature. The additional description goes into more detail about its accessibility and use.

<Table 9> Descriptive Translation of ICT terms

In translating a phrase, the most important orientation is so that the TL reader does not misunderstand the meaning contained in the SL. For example, the phrase "dictionary word", when viewed in context, the phrase "dictionary" means words that are found or listed in a dictionary. If the phrase "dictionary word" is translated into a word dictionary, of course the meaning will be slightly different, namely a dictionary of words. While if translated into words, then of course the meaning is also not very clear. Therefore, the selection of translation requires the addition of some descriptions in translating the phrase "dictionary word" into a word found in the dictionary.

4.4 Results and Discussion

This study discusses how the absorption concept is applied in translating ICT terms in the form of nouns and noun phrases from the source text (SL) into the target text (TL), and evaluates its suitability with Newmark's (1988) theoretical approach and the General Guidelines for Term Formation (Pusat Bahasa, 2007).

4.4.1 Absorption Concept in Translating ICT Terms

Based on data analysis, the use of the absorption strategy in translating ICT terms has proven effective in maintaining the accuracy and consistency of technical terms. Of the 113 nouns and 87 noun phrases, most terms such as software, router, and modem are directly absorbed into Indonesian through the transference method (absorption of terms without change) or naturalization (adjustment of spelling/phonology). This strategy is in line with the five reasons put forward by Newmark (1988), namely: improving cross-language translation, facilitating understanding for local readers, maintaining consistency and accuracy of terms, helping to create consensus among experts, avoiding negative connotations in local equivalents.

4.4.2 Compliance with PUPI as General Guidelines for Indonesia Terminology Formation

The discussion also highlighted the differences in approach between Newmark's absorption concept and the Language Center's guidelines (Pusat Bahasa, 2007). The latter emphasizes adaptations that comply with the phonological and morphological rules of the Indonesian language, such as the term *komputer* (from computer) or *basis data* (from database), to maintain language identity and enrich local vocabulary. On the other hand, Newmark is more flexible, allowing the inclusion of foreign terms to ensure clarity and accuracy.

4.4.3 Implications of Absorption Application in ICT Translation

The discussion shows that the translation of ICT terms in the form of nouns and noun phrases tends to combine strategies from both approaches. For example, common technical terms such as modem are absorbed using the naturalization method, while complex terms such as cloud computing are often maintained without change to maintain technical accuracy. This implication emphasizes that flexibility in choosing a strategy is essential to meet the needs of cross-cultural and technical communication in the ICT context.

4.4.4 Recommendations for Consistency and Adaptation of Terms

Based on these findings, the study recommends a combination of the application of local guidelines and Newmark's theory to produce effective translations. Absorption can be used by considering the needs of the target audience and the context of use, while maintaining conformity with Indonesian language rules to strengthen local identity.

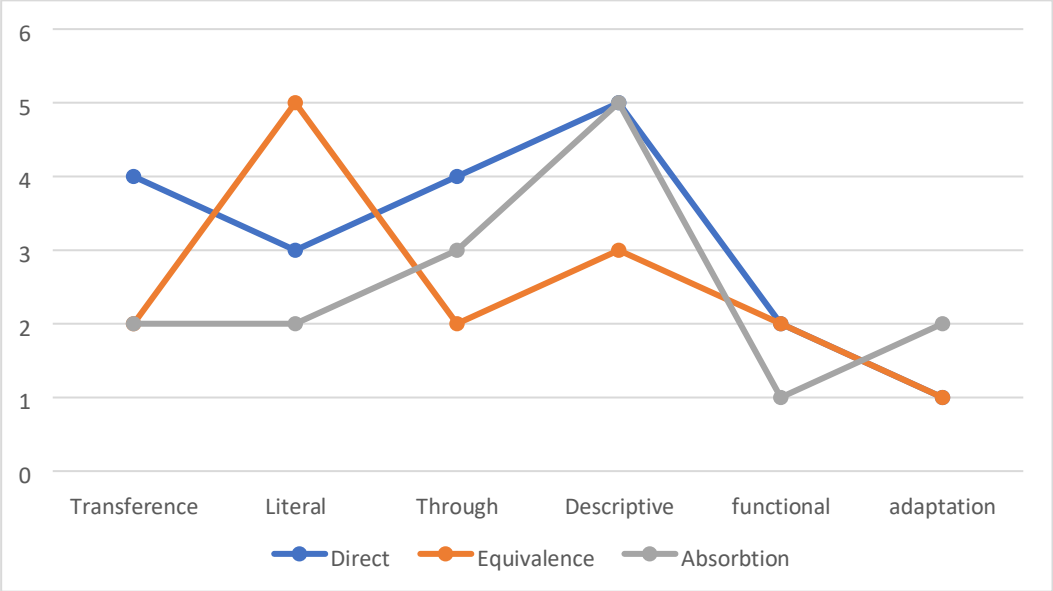
Thus, this discussion shows that the absorption strategy plays an important role in translating ICT terms in the form of nouns and noun phrases, supporting the integration of foreign terms without ignoring the uniqueness of the Indonesian as TL. Based on Newmark's absorption concept, this study shows that the translation of ICT terms often involves transference (maintaining foreign terms) or naturalization (adjusting spelling/phonology) to meet the needs of technical communication. However, there are differences when compared to the absorption concept according to Pusat Bahasa (2007) in PUPI as the General Guidelines for Term Formation from the Language Center. These guidelines are stricter, emphasizing adaptations that are in accordance with the phonological and morphological rules of the Indonesian language, such as the use of the words *komputer* (from computer) and *basis data* (from database), rather than directly maintaining foreign terms. The Language Center's approach focuses more on maintaining language identity and enriching local vocabulary, while Newmark is more

flexible, prioritizing aspects of communication and accuracy. Thus, this study is in line with Newmark in the context of using foreign terms to facilitate understanding and maintain accuracy, but also accommodates adaptations according to local rules as regulated by the PUPI as Indonesian Language Center Guidelines.

4.5. Interpretation Using Graph Result

While qualitative studies do not often use graphs or charts, the interpreting of use it in this research is in order to support certain data, especially showed the frequency of translation methods used. Bar graphs used data to support this, as the percentage of use of a particular method in translating ICT terms.

There are some translation methods of technical term, especially for technical terms, such as those often used in the field of ICT in the findings of this study, as seen in the following explanation and as described in the following chart, included:



<Graph 1> Methods Used in ICT Terms

Based on the graph above, it shows that: method of transference maintaining the original term without changes, usually for terms that are already commonly used, for example "modem", "internet". Naturalization adjusting foreign terms to suit the phonological or morphological system of the TL. Example: "digital" becomes "*digital*" in Indonesian, with the same spelling but adjusted to Indonesian grammar. Calque or loan translation on terms are translated literally word for word. Example: "cloud computing" becomes "*komputasi awan*". Descriptive equivalent explaining foreign terms with descriptions in the TL. This is often used if the term does not yet have a clear equivalent in the TL. Last, the functional equivalent using terms "software" is translated into "*perangkat cahaya*" that have the same function in the context or context of the TL.

In the context of equivalence term, semantic translation found equivalent terms that match the technical or conceptual meaning of the ICT term in the source language, even if the language structure or term is less common in the TL. Translating the term "algorithm" into "*algoritma*", semantic translation ensures that the term retains its original meaning, namely systematic steps to solve problems in the computer field. Meanwhile, as previously stated, communicative translation focuses more on the acceptance and understanding of the TL reader. In term equivalence, this approach emphasizes

simplicity and readability. In this research data, the foreign term "mouse" in the computer context is translated as "*tetikus*" in Indonesian, although the term is taken from a different word, it is more communicative for local understanding to be easily understood by TL users, even if it requires adjustment or change the term can be more familiar to the reader.

In general, the analysis of the three aspects resulted several things, including: (1) Dominance of noun and phrase translation. Most findings of data showed a tendency to translate ICT terms in phrases, especially for terms consisting of several words. This shows an effort to maintain the conceptual meaning of the original term. (2) Consistency in polarity found the principles of positive-to-positive and negative-to-negative are generally maintained in the datas of ICT terms given, such as "open source"→ *"sumber terbuka",* "cybersecurity"-*"keamanan siber",* "offline" - *"luring (luar jaringan)"*. This showed an effort to maintain the emotional nuances of the original term. (3) Consistent maintenance of word class shown word classes are generally maintained in the translation, indicating a good understanding of language structure, such as "to debug" – "*men-debug*", "database" – *"basis data"*.

CONCLUSION

It can be concluded that in technical, scientific, and professional fields such as ICT, it is often difficult to find the exact equivalent of a term in the TL. Therefore, as the exploration of translation methods found in the data of this study, maintaining the original term from the SL may be necessary if the term has become part of the international vocabulary or if the exact equivalent is not available in the TL. This is in line with Newmark's theory that in the context of highly technical terminology, literal translation or transference is often the best choice because it avoids misunderstanding or losing the specific meaning of the term. Such as term "algorithm" is translated as *"algoritma"* (literal translation) that maintained literally because it has become part of the international vocabulary and has a direct equivalent in Indonesian; "cloud computing" is translated as *"komputasi awan"* (literal translation) that maintains the technical meaning of the source term, without losing its technological context; "firewall" is not translated, it remains "firewall" that is maintained in its original language because it has become an international technical term that is easier to understand without translation; "software" is translated as *"perangkat lunak"* that using a descriptive method to explain the concept more clearly in Indonesian; "big data" is translated as "basis data", despite the literal translation, this term can still be understood because of its contextualization in the field of technology. These examples show how translation methods such as literal translation and transference can be used for terms that have direct equivalents or that have become part of the global vocabulary in the field of ICT.

This is in line with Newmark's theory that in the context of highly technical terminology, literal translation or transference is often the best choice because it avoids misunderstanding or losing the specific meaning of the term. Some observable trends are (1) adaptation as shown many ICT terms are adopted directly from English because there is no exact or more commonly used equivalent. (2) Communicative Translation method is widely used to translate the conceptual meaning of ICT terms. (3) Combination of Methods: Often, a single term is translated using a combination of several translation methods. So far, the results of this study have been able to provide attention to the equivalence of terms, especially in the context of technical and scientific translation. Discussion of how translators should be careful in choosing the right equivalent for important terms, either through direct (literal) translation, transference, or descriptive methods. The goal is to ensure that the term can be understood well by the TL readers without losing the original meaning of the source text.

Based on the results of the analysis of the research data, it has been proven that the right translation method is very important in translating ICT terms, because these terms often contain new concepts that are not familiar to readers in the TL. the accuracy of the choice of method has a serious impact on the use of the term. The translation of the term ICT in the terminology data found has

followed the guidelines set by the Indonesian Language Center quite well. The translation methods produced are generally referred to the translation theory approach according to Newmark. Most have been translated consistently, and are easier to understand for Indonesian readers.

Newmark's approach provides flexibility and guidance that is very useful in choosing the right method, both literal translations to maintain accuracy and communicative translation that focuses more on target readers, which is an important element in the effective dissemination of cross-language technology information. Therefore, this study refers to Newmark's translation theory which is very relevant in the context of translating ICT terminology. Further, the descriptive text method ensures that readers of the TL do not misunderstand or misunderstand the meaning of terms taken from the SL, especially in technical or specialized contexts. The additional description clarifies the meaning and function of the phrase so that it could be easier to understand.

Further, absorption strategy plays an important role in translating ICT terms in the form of nouns and noun phrases. The application of transference and naturalization methods supports accuracy, consistency, and ease of understanding, in line with Newmark's five reasons (1988). However, this approach needs to be balanced with the PUPI as General Guidelines for Terminology Formation (Pusat Bahasa, 2007) to ensure the adaptation of terms according to Indonesian language rules. Flexibility in choosing a translation strategy is key to maintaining technical clarity while strengthening local identity in the context of ICT.

LIMITATION, FUTURE RESEARCH, AND CONTRIBUTION

One limitation of this study on exploring translation methods in ICT terminology formation using Newmark's translation theory is the focus on a limited set of specific terms and examples from the ICT domain. The analysis predominantly revolves around certain well-established translation strategies, which may not fully capture the complexity of newly emerging ICT terms or jargon. Additionally, the study does not thoroughly address the potential influence of cultural factors in the translation process, which could impact the adaptation of ICT terms in different linguistic contexts.

Future research could explore a broader variety of ICT terminologies, particularly those that are continuously evolving with technological advancements. Moreover, investigating how cultural context affects the translation of technical terms and comparing translation strategies in different languages could provide richer insights. Another area for further exploration is the use of machine translation tools and their effectiveness in handling complex ICT terminologies, particularly in translating multi-word phrases.

Despite these limitations, this study contributes valuable insights into the practical application of Newmark's translation theory for ICT terminology, offering a foundation for translators and researchers to approach the formation of accurate and consistent translations in the field of information technology. Further, this research also contributes significantly by offering a structured examination of how Newmark's approach can be applied systematically to improve the clarity and consistency of ICT term translations in educational contexts.

REFERENCES

Baker, M. (2018). *In Other Words_ A Coursebook on Translation_Mona Baker (1)*. *3*, 1–391. www.routledge.com/cw/baker

Echols, J. M. D. H. S. (2014). *Kamus Bahasa Inggris Indonesia*. PT. Gramedia Pustaka Utama.

Hoed, B. H. (2006). *Translation and Culture*. Pustaka Jaya.

Kridalaksana, H. (1998). *Introduction to word formation and word classes in Indonesian* (Vol. 1). Fakultas Sastra Universitas Indonesia.

Newmark, Peter. (2003). *A textbook of translation*. Pearson Education Ltd.

Nida, E. A. , & Taber, C. R. (2003). *A New Concept of Translating. In The Theory and Practice of Translation* . 1–11.

Pym, A. (2010). *Translation Theories Explained*.

Subakti, H., Ayuningrum, S. S., Devi, R., Jafar, S., Sakti, B. P., Rejo, U., Chairunnisa, Rohmah, N. B., Hasanah, N., & Saddhono, K. (2022). *MEMAHAMI BAHASA INDONESIA DI PENDIDIKAN TINGGI* (U. Rejo & N. B. Rohmah, Eds.; 1st ed.). Adab: CV Adanu Abimata. https://www.researchgate.net/publication/371853277

Vinay, J-p, Darbelnet, & Jean. (1995). *Comparative Stylistics of French and English* (J. C. Sager & Hamel M J, Eds.; J. C. Sager, Trans.; Vol. 11). John Benjamins Publishing Company.