

**T.C.
SAKARYA UNIVERSITY
GRADUATE SCHOOL OF SOCIAL SCIENCES
DEPARTMENT OF TRANSLATION STUDIES**

**INVESTIGATING TRANSLATOR TRAINERS' PERCEPTIONS OF
MACHINE TRANSLATION IN TÜRKİYE**

Zeynep HİDİR

MASTER'S THESIS

Thesis Supervisor: Assoc. Prof. Halil İbrahim BALKUL

JUNE - 2024

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“This thesis was defended online on 25/06/2024 and was unanimously accepted by the jury members whose names are listed below.”

JURY MEMBER	APPROVAL
Assoc. Prof. Halil İbrahim BALKUL	Successful
Assoc. Prof. Caner ÇETİNER	Successful
Assist. Prof. Özden ŞAHİN ER	Successful

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- Retrospective studies in accordance with the personal data protection law.)

Zeynep HIDIR
25/06/2024

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ABBREVIATIONS

ALPAC	: Automatic Language Processing Advisory Committee
CAT	: Computer-Aided / Computer-Assisted Translation
EFL	: English as a Foreign Language
FAHQT	: Fully Automated High Quality Translation
FAHQMT	: Fully Automated High Quality Machine Translation
FOMT	: Free Online Machine Translation
HAMT	: Human-Aided Machine Translation
HT	: Human Translation
L2	: Second Language
LQA	: Language Quality Assurance
MAHT	: Machine-Aided Human Translation
MT	: Machine Translation
MTPE	: Machine Translation Post-Editing
NMT	: Neural Machine Translation
RBMT	: Rule-Based Machine Translation
SMT	: Statistical Machine Translation
ST	: Source Text
TB	: Term Base
TM	: Translation Memory
TT	: Target Text
YÖK	: The Council of Higher Education
YÖK Atlas	: The Council of Higher Education Program Atlas

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ABSTRACT	
Title of Thesis: Investigating Translator Trainers' Perceptions of Machine Translation in Türkiye	
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As machine translation (MT) has proven to be an important part of translation-related activities, many studies have been conducted to understand the nature of MT, its advantages and disadvantages, its quality, etc. However, it has been found that there are not enough studies focusing on the perceptions of translator trainers in Türkiye. The starting point of this study is the lack of literature on translator trainers' views on MT. This study seeks to answer: 1- What do translator trainers in Türkiye think about MT? 2- Do translator trainers use MT systems in their courses when teaching translation? If so, for what purposes do they use them? 3- How can translator trainers improve their technology acceptance of MT? What can be done to encourage the acceptance of MT technology by translator trainers? Again, with the development of MT, a new concept called "MT literacy" has come to the fore. In short, this concept refers to the ability to understand the quality and limitations of MT systems and the ability to use and evaluate them. MT literacy requires the knowledge and skills to work effectively with MT tools and make informed decisions about their use. As MT technologies become more prevalent in our daily lives and various professional fields, the ability to understand and use MT effectively is becoming increasingly important. The objective of this study is to gain a deeper insight into the level of MT literacy among translation trainers in Turkey, with a particular focus on the three research questions that form the core of this study. In this study, a questionnaire was used to obtain the views of translation trainers on MT. This study yielded valuable insights into the perceptions of translator trainers in Türkiye on MT, their MT literacy, their MT use, and new topics for study to better use MT in translation training.	
Keywords: Machine Translation, Translator Training, Translator Trainer, Translation Education, Translation Technologies	

ÖZET	
Başlık: Türkiye’deki Çeviri Eğitimcilerinin Makine Çevirisine Yönelik Algılarının İncelenmesi	
Yazar: Zeynep HİDİR	
Danışman: Doç. Dr. Halil İbrahim BALKUL	
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Makine çevirisinin çeviri faaliyetlerinin önemli bir parçası olduğu kanıtlandığından makine çevirisinin doğasını, avantajlarını ve dezavantajlarını, kalitesini vb. anlamak için birçok araştırma yapılmıştır. Ancak Türkiye’de çeviri eğitimcilerinin bu konudaki algı ve bakış açılarına odaklanan yeterli çalışma olmadığı tespit edilmiştir. Bu araştırmanın çıkış noktası da çeviri eğitimcilerinin makine çevirisi hakkındaki görüşlerine ilişkin literatürdeki eksiklik olmuştur. Bu çalışmada şu sorulara yanıt aranmıştır: 1- Türkiye’deki çeviri eğitimcileri makine çevirisi hakkında ne düşünüyor? 2- Çeviri eğitimcileri çeviri eğitimi verirken derslerinde makine çevirisi sistemlerini kullanıyor mu? Kullanıyorsa hangi amaçlar için kullanıyor? 3- Çevirmen eğitimcileri makine çevirisine ilişkin teknoloji kabullerini nasıl geliştirebilir? Çeviri eğitimcilerinin makine çevirisine yönelik teknoloji kabullerini teşvik etmek için neler yapılabilir? Yine makine çevirisinin gelişimiyle birlikte "makine çevirisi okuryazarlığı" adı verilen yeni bir kavram gündeme gelmektedir. Bu kavram kısaca makine çevirisi sistemlerinin kalitesini ve sınırlılıklarını anlamının yanı sıra bu sistemleri kullanma ve değerlendirme becerisini ifade etmektedir. Makine çevirisi teknolojileri günlük hayatımızda ve çeşitli profesyonel alanlarda daha önemli bir rol oynadıkça makine çevirisi okuryazarlığı da giderek önem kazanmaktadır. Bu çalışmanın Türkiye’deki çeviri eğitimcilerinin makine çevirisi okuryazarlığı düzeyini daha iyi anlamaya yardımcı olduğu düşünülmektedir. Bu çalışmada çeviri eğitimcilerinin görüşlerini ortaya çıkarmak için anketten yararlanılmıştır. Bu çalışma sonucunda Türkiye’deki çeviri eğitimcilerinin makine çevirisi hakkındaki görüşleri, makine çevirisi okuryazarlıklarının hangi düzeyde olduğu, makine çevirisini kullanıp kullanmadıkları, makine çevirisini derslerinde nasıl kullandıkları hakkında yararlı bilgiler elde edilmiş ve çeviri eğitiminde makine çevirisini daha iyi kullanmak için yeni çalışma önerileri sunulmuştur.	
Anahtar Kelimeler: Makine Çevirisi, Çevirmen Eğitimi, Çevirmen Eğitmeni, Çeviri Eğitimi, Çeviri Teknolojileri	

INTRODUCTION

Machine Translation (MT) is widely used for both daily and professional life situations today. The increasing use of the internet by individuals for international communication and getting information about content in foreign languages can be said to be the first two reasons for using MT in daily life. In addition to this kind of individual reasons for using MT, globalization has also played a crucial role in the prevalent use of MT in professional settings. Sing (2004) summarizes the globalization concept as follows.

“Globalization has been variously described as a phenomenon, an argument, and a vision. For the purposes of this essay, globalization is defined as a set of theories that provide researchers with conceptual tools for analyzing and understanding current economic, cultural, and technological changes, as well as “a process and a phenomenon” that is experienced in complex, uneven, and varied ways by people across different places or locales. As a process and a phenomenon, globalization has “to be actively implemented, reproduced, serviced and financed” and it “relies for its functioning on several overlapping structures and relations from the local, to the national, to the global.” In other words, globalization is not a predetermined force that pushes and molds local contexts into uniform shapes.” (Sing, 2004, p.103)

The increasing volume of translations brought by globalization’s effects has led to the use of technology in the translation industry more commonly. Translation technologies, computer-aided translation tools and MT, are designed to speed up the translation process and provide consistent translations. “Mastery of translation technologies is now a key professional requirement, and they are developing at an unprecedented rate.” (Rothwell et al., 2023, p. 2)

“There is now very little translation that could not be considered a form of human-computer interaction, as noted by (Gaspari et al., 2014), from working within a text-editing interface with automatic spelling and grammar checking, to making use of online machine translation (MT), based on huge repositories of previous translations, with Introducing Translation Tools and many tools and options for assistance and automation in between. As a key and highly visible example of artificial intelligence (AI) in action, MT is the most widely used translation technology today, but there are many other tools that translators work with when producing a high-quality translation.” (Rothwell et al., 2023, p. 2-3)

Computer-Aided or Computer-Assisted Tools (CAT tools) represent the other translation technologies that smooth the translation process for translators. These tools provide the translator with a workbench or workstation including all necessary components required during the translation process. These components mainly include translation memories (TMs), glossaries or term bases (TBs), and workflow management tools. Today, it is also possible to integrate an MT software/program/engine into a CAT tool, enabling the translator to benefit from a CAT tool and an MT at the same time on the same screen.

The skyrocketing technological advances have led to changes in translation practice as well. With the development of automation and artificial intelligence as well as MT, translators now need to acquire some technological skills. For translator candidates to meet the employment requirements of the translation industry, they need to learn new translation technologies better. This requires the integration of translation technologies into the curricula of university departments teaching translation. Given the increasing use of MT in the translation industry, translator candidates need to learn how to use MT, what are its advantages and disadvantages, as well as its limitations. Much research has been performed to figure out how to teach MT in translation classrooms. Some others tried to discover the perception of translation students regarding MT. Another issue is how to integrate MT to the current curricula as a stand-alone course or across the curriculum. Conceived as an instrumental competence, translation technologies are observed to be taught generally in specific courses in translation curricula. However, there are also other arguments that MT should be taught across the curriculum of a translation department to better prepare future translators for professional life.

The integration of MT into the translation curricula is highly related to the stand of translator trainers towards MT. As the agents of teaching the theory and all intricacies of the translation profession, the translator trainers have a high influence on the education of the translation students. For this reason, it is believed that the perceptions and MT literacy of the translator trainers should be considered while thinking of the integration of MT into the curricula.

Subject of Research

With the development of MT, the place and use of MT in academic translation teaching has become increasingly significant. Although there are many studies worldwide on the advantages and disadvantages of MT as well as its quality and how it can be integrated

into translation education, there are very few studies focusing on translator trainers' views on MT. To help fill this gap in the literature, this study aims to contribute to the literature by obtaining the opinions of translator trainers in Türkiye and providing information about their general views on MT as well as whether and how they implement MT in their courses.

Importance of Research

Considering the increasing prevalence of MT use both in daily life and in the translation industry, research on MT has gained much more importance. Much research has been performed about MT and its nature, its working principles, its benefits and drawbacks, how to use and teach MT in classrooms, etc. However, it has been observed that the perceptions of translator trainers did not get as much attention as those of language learners, translation department students, and professional translators. This observation has become the first inspiration for this study. Moreover, if the translator trainers are the facilitators of learning translation skills for the translation students to meet industry standards when they graduate, then the perceptions of translator trainers about MT should be taken into consideration. This is because the translator trainers are the ones who prepare translation students for professional life as translators. MT possesses an essential place in the translation industry at present. This study is thought to shed light on the perceptions of translator trainers in Türkiye and the results obtained from this study will provide some suggestions about the translation training in Türkiye to prepare more equipped translator students for professional life.

Purpose of Research

The place and importance of MT in translation education have begun to attract attention with the widespread use of MT. At this point, it is believed that there is a need to reveal the opinions of translator trainers on MT, to determine the applications of MT in translation education, and to obtain the opinions of translator trainers on the integration of MT in translation education. This study aims to find out the perceptions of the translator trainers in Türkiye about MT, to find out how the relationship between MT and translation education is or should be established, and to make suggestions on how MT can be used in academic translation education in the light of the findings obtained.

Method of Research

This study was conducted through a questionnaire, a method of carrying out quantitative analysis, applied to translator trainers with the aim of obtaining quantitative and qualitative data on both translator trainers and translator trainers' views on MT. The questionnaire was prepared on Google Forms by the researcher herself. Then, the questionnaire was sent to two different translator trainers working at different universities in Türkiye to confirm its appropriateness. One of these evaluators is a lecturer of translation studies teaching translation technology courses and the other one is also a lecturer in translation studies and expert in teaching literary translation and translation theories. These two trainers were chosen deliberately to prepare a suitable questionnaire addressing both kinds of trainers: expert in the translation technologies and expert in other fields of translation. The participants of the questionnaire were invited to answer the questionnaire through emails sent to their inboxes. The questionnaire was open to answers between April 23, 2024, and May 10, 2024. For the analysis of the multiple-choice questions, descriptive statistics method was used. As for the analysis of the open-ended questions, thematic analysis method was employed.

Limitations

The questionnaire was sent to 250 translator trainers through email. However, only 52 translator trainers took part in the questionnaire. Although this number is quite low compared to the number of intended participants, it is thought that the total number of participants is enough to represent the translator trainer population in Türkiye which is thought to be around 400. The questionnaire was intended to be administered to the translator trainers working at undergraduate level institutions. Therefore, the views presented in this study do not cover the opinions of translator trainers working at vocational higher education institutions. Another limitation is rooted from the lack of questions regarding the MT use in interpreting courses even though no distinction was made during the participant targeting process between trainers teaching translation or interpreting courses. Finally, member checking was not available during the data analysis process. Member checking means that the researcher can contact the participants after the administration of the questionnaire to confirm whether a thought or idea taken from the answers are truly interpreted. The email details of the participants were not collected during the administration of the questionnaire, making it impossible to guess the relevant

participants let alone contact them. This limitation's effect on the interpretation of the collected data was minimized by not making any guesses about what participants tried to mean. The collected data was read line-by-line during the thematic analysis application and coding was carried out with no interference or personal judgment by the researcher.

Research Questions

- 1- What do translator trainers in Türkiye think about machine translation?
- 2- Do translator trainers use machine translation systems in their courses when teaching translation? If so, for what purposes do they use them?
- 3- How can translator trainers improve their technology acceptance of machine translation? What can be done to encourage the acceptance of machine translation technology by translator trainers?

Structure of the Sections

This study is structured into five main sections. The first section is an Introduction to the MT and its significance in the translation area. The second section, Literature Review, elaborates on three subsections: Translation Technologies i.e. CAT tools and MT, Translation Pedagogy, and Previous Studies on the Perceptions of Different Agents. i.e. translation department students, professional translators, translator trainers, and foreign language learners. The third section presents the details of the Methodology of the current study. The fourth section lays out the Findings and Discussion of the study. The final section is the Conclusion. This section concludes the study based on the findings of this research and the discussion made in the previous section.

CHAPTER 1: LITERATURE REVIEW

1.1. Translation Technologies

Translation practice has seen the influence of technological developments over the years. The traditional translation practice, which refers to the translation practice before the use of technology for the translation process according to Şahin (2013), has changed with the use of word processors and online dictionaries that used to be carried out with pen and paper. Over time, the use of computers, which are machines in this case, during translation has led to an endeavor to classify translation types. One of the earliest suggestions was put forward by Hutchins and Somers (1992) to classify translation types according to the level of automatization in the translation process as seen in Figure 1 below.

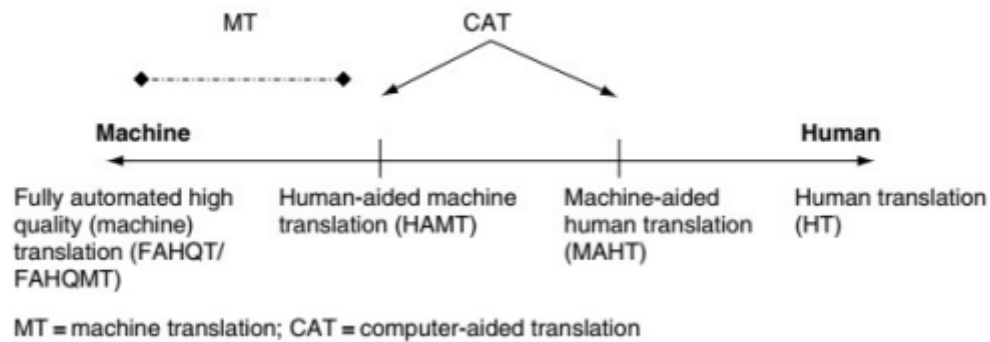


Figure 1: Classification of Translation Types

Source: (Hutchins and Somers, 1992, p.148)

As Figure 1 shows, there is a linear continuum with two ends where there are machine and human factors. Machine Translation (MT) refers to the machine end where the translation is carried out by only computers with no human intervention. On the other end, the human is the one who carries out the translation process with no aid from machines. This kind of translation is called human translation (HT). However, there is another factor which is CAT. As the level of getting assistance from CAT tools increases, the translation's nature tends to go to the machine-aided human translation (MAHT). This kind of translation is carried out by a human translator with some aid from a CAT tool. On the contrary, if the translation is performed by a machine, a computer in this case, and some human intervention is involved, then this translation is defined as human-aided machine translation (HAMT). According to this linear continuum, MT resulting in high

quality translations with no human interference is called fully automated high quality translation (FAHQT) or fully automated high quality machine translation (FAHQMT). FAHQMT can be said to be the highest ideal for the translation industry. However, studies show that there is still a need for human touch (Koponen, 2016), making FAHQMT not thoroughly possible for now. Moreover, Quah (2006) asserts that it is not always possible to make a distinction among these terms as “most tools today are integrated systems which contain features from more than one class” (p.8). This assertion supports the idea that the boundaries defining these terms are blurred.

As technology has become more advanced year by year, new developments have been introduced to the translation industry. These needs have accelerated the research and development of translation technologies. Translation technologies cover CAT and MT. The categorization of these two technologies is provided in Figure 2.

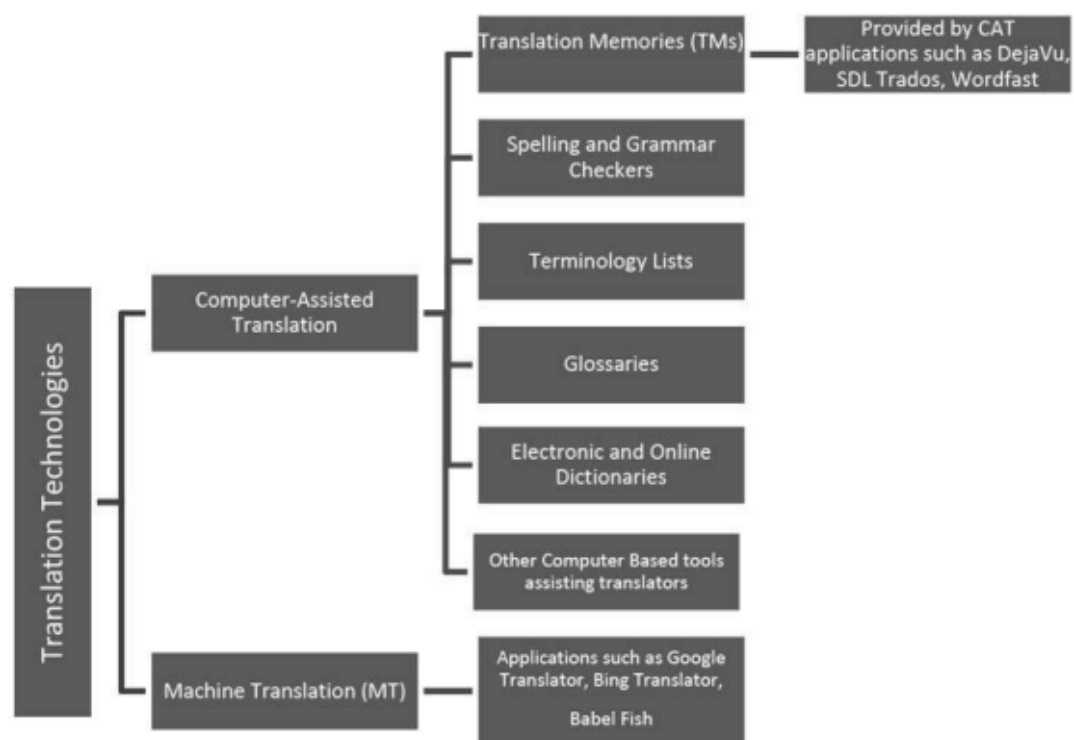


Figure 2: Categorization of Translation Technologies

Source: (Van Rensburg et al., p. 516)

According to Figure 2, the translation technologies are classified into two categories as CAT and MT. While MT represents different software such as Google Translator, known as Google Translate now, Bing Translator, and Babel Fish, the CAT has some internal and external components. Translation memory and term base are the internal components

of a CAT tool. Grammar and Spelling Checkers are also available in many CAT tools as well. Apart from these, electronic and online dictionaries serve as CAT components that help translators work with the help of a computer. Sometimes, these tools also can be used internally in a CAT tool. The two categories of translation technologies will be elaborated in the following two sections.

1.1.1. Computer-Aided Translation

As the name suggests, computer-aided or computer-assisted translation refers to a translation performed by a human translator with the aid of a computer. A tool developed to serve as an assistant to human translators is called a CAT tool. CAT tools are designed to assist a translator to make their translation more efficient in a shorter time. Rothwell et al. (2023) assert that “the imperative to make translation quicker and more accurate’ was the driving force behind the development of CAT tools. A CAT tool does not automate the translation process as MT does. It has several components that make dull and repetitive tasks, leaving the translator the task of dealing with other more creative points of translation. These components can be listed as translation memory (TM), glossary or term base (TB), and workflow management tools.

TMs support the translator with already translated texts or text parts. A TM is built up from previously translated texts. There are three ways to create a TM: creating from scratch, using import feature of CAT tools, and alignment. When you input a text into a CAT tool, the given text is divided into segments in the tool, which is called segmentation. These segments can be made up of only numbers, phrases, or full sentences. When a translator translates a segment, both the source and target segments are coupled and saved to the TM. Then, when a similar segment is to be translated, the matching segment and the matching rate is showed on the relevant part of the editor screen. This helps the translator finish the translation faster and more consistently. Because they do not have to translate those segments or some parts of those segments again and again. This process refers to creating a TM from scratch. CAT tools also have import and export features. One can export an existing TM to use it in another CAT tool later. On the other hand, the import feature of these tools also allows importing previously created and exported TMs into the tool. This is the process of using import feature of CAT tools to create a TM. There is also another way of creating a TM, which is alignment. For this, if one has the

source text (ST) and the target text (TT) of a translated document, they can align these two documents together. This process is called alignment. Then, the aligned document is imported into the tool and from there on it can be used as a TM.

The glossary or the term base has a similar feature to that of a TM. However, the term base only includes words or short expressions defined as terms while TMs are storing the whole segments. The terms can be manually designated in the tool during translation or can be imported into the tool as a list of terms upon preference. When a translator comes across a term in the ST, then the saved term equivalence is showed on the relevant part of the screen again, shortening the time for looking for term equivalent and helps providing consistency throughout the TT or even the entire translation project consisting of many separate tasks.

Workflow management tools in a CAT tool allow the project manager to assign tasks to translators, split the task between or among translators, leave notes to the translators, etc. These three main features of any CAT tool can be said to be of significance in terms of easing and accelerating the translation process. With the developments in MT field, it is also possible to integrate an MT engine into a CAT tool now.

In the last two decades, there has been improvement regarding the use of these technologies. The CAT tools can be desktop-based or cloud-based. The cloud-based CAT tools allow a translator to translate their translation task or project wherever and whenever they want as long as they have a computer and internet connection. SDL Trados (now RWS Trados) is probably the most popular CAT tool around the world. It was used as a desktop-based for a long time, however, it also released its cloud-based version in recent years. Some of the other CAT tool examples are Phrase (previously known as Memsource), SmartCat, XTM, Nubuto (brand name of XTM in Türkiye), etc.

As mentioned before, what distinguishes a CAT tool from an MT software is that the CAT tool does not seek to create automatic translations, it just assists the translator during the translation process. The translation is made by the human translator but with the help of CAT tool technology. On the other hand, MT software or engine is designed to create automatic translations without the interference of a translator. The features of MT software will be presented in the following section.

1.1.2. Machine Translation

This chapter will elaborate on machine translation starting with its definition and a brief history of its development. Later, it will briefly present the MT types. The whole features of MT types will not be covered as they are not directly related to the research goals of this study.

According to Sin-Wai (2004) machine translation “refers to the use of machines (usually computers) to translate texts from one natural language to another” (p.137). Rothwell et al. (2023) give a quite similar explanation for the term and stresses how it has gained significance in translation process.

“Machine translation (MT) is the term used for the automatic translation of text by computer software. It has moved from being a fringe pursuit of early digital computer enthusiasts to one of the most visible and widely available applications of artificial intelligence (AI) and a key part of many translation production workflows.”
(p.97)

This pursuit for automatic translation burgeoned in the 1940s. During World War II, the idea of using computers to decode cryptographic communication between other countries sparked off research on MT. Over the years, different research was carried out on the feasibility of using computers for automatic translation purposes. In 1952, the first conference on MT was organized by the Massachusetts Institute of Technology. After the conference a research team was formed by Leon Dostert at Georgetown University to test the practical feasibility of MT.

‘Dostert was fully aware of the considerable linguistic problems of MT but had concluded that “rather than attempt to resolve theoretically a rather vast segment of the problem, it would be more fruitful to make an actual experiment, limited in scope but significant in terms of broader implications” and that the test should serve as the basis for a series of progressively larger and more complex tests. In brief, Dostert advocated what was later to be generally known as the ‘empirical’ approach to MT research. Collaboration was agreed with IBM, under the aegis of the company’s programme of endowed research in computation; Paul Garvin was appointed at Georgetown to work on the linguistic procedures for the trial translation of Russian texts; and Peter Sheridan of the IBM Scientific Computing Service was given the task of implementing the procedures on the IBM 701 machine.’ (Hutchins, 1986)

In the early beginning of 1954, the Georgetown-IBM experiment was conducted. In the experiment “a vocabulary of just 250 Russian words, only six rules of grammar and a carefully selected sample of Russian sentences’ (Hutchins, 1986) were translated into English. The result was “fully intelligible” (Hutchins, 1986). This experiment showed that MT was an achievable goal.

“Machine translation was one of the first non-numerical applications of computers. For more than a decade until the mid 1960’s it was an area of intensive research activity and the focus of much public attention; but early expectations were not fulfilled, promises of imminent commercially viable systems came to nothing, and the problems and linguistic complexities became increasingly apparent and seemed to be ever more intractable. After a widely publicised report compiled for the major US sponsors, the ‘notorious’ ALPAC report (ch.8.9), machine translation was generally considered to have been a ‘failure’, and no longer worthy of serious scientific consideration.’ (Hutchins, 1986)

This report undermined the ongoing research on MT. Started with great enthusiasm and high hopes, the MT turned out to be a failed attempt at the time. The ALPAC report hurt the MT research and slowed the development of this technology, however, MT research did not fully stop. Although MT is a concept referring to the use of computers to translate natural languages, there are several ways to automate the translation process. Early research on MT was based on rule-based machine translation (RBMT) as in the case of the Georgetown-IBM experiment. There is also statistical machine translation (SMT) and neural machine translation (NMT). As each name suggests, these MT processes benefit from rules, statistics, or a combination of both, which is called “neural” machine translation. There is much research on each type of MT, however, this study will not focus on the features of MT types as they are not directly related to the aim of this research. It is worth mentioning that the purpose of producing an MT elicited two concepts: assimilation and dissemination. Rothwell et al. briefly defines these two concepts as follows:

“When MT is produced as the final translation, perhaps to give a gist of a source text’s meaning, we call this MT for assimilation. When MT is produced as part of a translation workflow and is subsequently adapted or post-edited, we call this MT for dissemination.” (2023)

These two concepts are crucial in terms of defining some other concepts related to MT. As mentioned in Rothwell et al.'s definition of the MT for dissemination, the MT output can be exposed to post-editing process. This is because an MT output may not be suitable for dissemination in terms of its quality. At such a moment, a human translator edits the MT output to make it publishable and ready for dissemination. This process is called post-editing. Post-editing has also two types: light post-editing and full post-editing. What determines when to apply light or full post-editing is defined by the purpose of the translated text. If the translated text is wanted to be clear yet it will not be published publicly, then the light-post-editing can be applied. If the TT is wanted to be clear and it will be published, then full post-editing is required. It is possible to say that full post-editing goes into the TT much more than light post-editing.

Also, there is another concept referring to the process of editing the ST before the text is machine-translated. This intervention to the ST before MT use increases the quality of the machine-translated TT, shortening the time to post-edit the TT. The pre-editing process involves some rules such as not using complex sentences, not using more than a deliberate number of words in a sentence, using only active voice or using only passive voice, etc. All these attempts to pre-edit the ST requires controlling the language use for the ST to be machine-translated. So, controlled language use can be said to be another concept of value related to MT.

In addition to these concepts, another concept related to MT has emerged and gained significance in recent years. According to O'Brien and Ehrensberger-Dow (2020), MT literacy refers to knowing how MT works, how to leverage from MT effectively in specific contexts, and using MT to fulfill other communicative needs. Bowker and Ciro (2019) argue that scholars, translator trainers here, need to develop machine translation literacy as a new form of digital literacy. Liu et al. (2022)

“propose a working definition of MT literacy in translation teaching settings:

- (1) Understanding the mechanism of different MT platforms;
- (2) Appreciating the broader implications of MT use;
- (3) Being able to critically evaluate MT-translated outputs;
- (4) Being able to modify or pre-edit a text for different MT platforms to translate;
- (5) Being able to edit MT outputs to improve accuracy and readability;
- (6) Knowing the advantages and limitations of MT;

(7) Understanding how different MT platforms and other CAT tools complement each other.”

This definition is thought to be quite comprehensive to better understand what to expect from an MT literate person. Krüger and Hackenbuchner (2022) has a more compact definition for MT literacy. They define this concept as “the full range of MT-related competences professional translators (and other language professionals) may require in order to participate successfully in the various phases of the MT- assisted professional translation process”. As expressed by Balkul (2015), understanding the boundaries and recognizing when to benefit from a translation technology, such as MT, is crucial to effectively benefit from them. So, being MT literate increases performance of using MT more effectively. This concept is of great value in terms of understanding the perceptions of the translator trainers involved in this study because it is thought to be hinting at the differences between the views towards MT. This concept is not significant only for the translator trainers, so the MT literacy of translation students should not be overlooked.

1.2. Translation Pedagogy

Translation pedagogy has only gained interest in the last three decades, though translation studies emerged as a separate discipline as early as the 1970s. As global developments and issues required an increasing number of translators as of the 2000s, a surge in the number of translation departments was reported. This increase in the need for more translators is linked to the fact that companies envisaged to become global, and this triggered a booming volume of translation, with the aim of releasing a product to the market at the same time all over the world. This, in turn, has created more vacancies for translation jobs.

For the above-mentioned reasons, new departments were founded to train translators at different levels. Previously known as self-trained staff, translators needed to be educated to keep with the developments and adapt to new settings and requirements of the global market. Underlining the fact that the scope and number of activities required from translators increased in the 21st century, Orlando (2016) also underscored the increasingly diversified text types and tasks to be completed as follows:

“In the 21st century, the scope of activities for translators is much broader than it used to be. They obviously translate various text types (technical, legal, medical, financial, literary, cultural, media) but they also use translation software and

information technology, revise translations, post-edit texts translated with machine translation, summarize texts, edit and adapt both originals and translations, do technical writing, manage projects, train peers, subtitle and dub multimedia texts, work on localization teams, create translation memories and terminology databases within commercial translation software, do research in computational linguistics, machine translation and language engineering” (p.23).

The variety of these tasks brings up new skills to the discussion in terms of what to expect from translators. As suggested by Hatim and Munday (2004), the rapid increase in globalization and the influence of the internet have already popularized fast translations of many sources, such as promotional texts, technical manuals, and webpages, into other languages. Thus, the use of translation technologies has gained much importance in terms of producing fast and consistent translations to fulfill the needs of the translation market. Odacıoğlu and Köktürk (2015) put forwards that “the teaching of technological tools in the academic translation teaching for translation students to use in the translation process is indispensable”. Thus, it is sure that these tools cannot be ignored and thus should be incorporated in the translation curriculum courses to better prepare future translators for professional life.

On the other hand, it is stated that compared to other areas of translation studies like literary translation, translation criticism and translation theory, the number of research on translation pedagogy has been rather low with sporadic attempts that underpin the importance of translator training only from a theoretical perspective (Çetiner, 2021). However, it is believed that hands-on practice is essential for translation students to be ready for professional life. Thus, studies on the active teaching and learning MT in translation classroom should be given more attention considering the current view of the translation industry and skills expected from professional translators.

Mellinger (2017) explores the skills required for graduate translators in professional life and he argues that skills such as post-editing, controlled authoring and engine tuning skills should be taught to translator candidates to better serve to the translation industry. He also explains that these skills should be taught not only stand-alone courses and technology courses, but also in different courses across the curriculum.

1.3. Previous Studies on the Perceptions of Language Learners and Different Translation Stakeholders Towards MT

It is possible to categorize studies on the perceptions regarding MT into four: perceptions of students, perceptions of professional translators, perceptions of translator trainers, and perceptions of foreign language learners. As this study focuses on the perceptions of the translator trainers, it will be mentioned last in order not to disrupt the flow of the information provided. Previous studies mentioned here do not cover all studies about the perceptions of this different groups who benefit from MT, yet they are chosen to give some general idea about the perceptions of them towards using MT.

1.3.1. Studies on Machine Translation in Language Learning

Clifford et al., (2013) touched upon the role of MT in language learning. They tried to elicit the use and perceptions of both second language (L2) students and instructors about MT. They explained that L2 students used MT in their language learning process for different purposes such as looking up words, double-checking their work, etc., finding it useful. Conversely, the L2 instructors were more circumspect about the potential positive impact of MT on language learning. Although L2 instructors did not perceive a threat to the profession, they expressed concerns about the use of MT by students from an ethical standpoint. They suggested that the use of MT might lead to academic dishonesty. Moreover, they posited that MT could be a more suitable and beneficial tool in advanced level courses. This study shows that a discrepancy exists among the perceptions of language students and instructors. The results of this study might be an indicator of a similar between the perceptions of novice translators and translator trainers about using MT for translation courses.

Jolley and Maimone (2015) conducted a similar survey-based study on L2 students and instructors. This study put forward that L2 students use MT mostly for their writing assignments rather than translation. They were aware that MT was giving better results in lexical units rather than long sentences. The “students were more confident than instructors that FOMT [Free Online Machine Translation] tool has a positive impact on their language learning.” (p. 195) This study strengthens the idea that MT can be a useful tool in language learning.

Utimadini (2023) investigated EFL (English as a Foreign Language) students' perceptions of MT as a learning tool. This study showed that students were skeptical about MT's accuracy and its potential to hinder language learning at first. However, as they became more familiar, students observed that MT is useful in terms of understanding texts and learning vocabulary. They highlighted that using MT as a supplementary tool alongside traditional learning methods to enhance their language skills effectively was of great significance.

1.3.2. Research on the Perceptions of Translation Department Students

As future translators, the students of the department of translation studies have become the focus of much research about MT. Their perceptions and attitudes were investigated in many studies. One of these studies was conducted by Rossi (2017) who investigated the integration of statistical machine translation (SMT) into translator training programs. This research focused on designing an SMT class for master's degree translation education. Quoting from Doherty and Moorkens (2013, p 127), she asserted that “students with little to no experience of using MT within a professional context have been shown to have skeptical to negative perceptions” (p. 52). However, this kind of perceptions “correspond to a frequently reported premature bias that might at least partly disappear as students start interacting with MT and understand how it works.” (p.52). And, she asserted that MT needs to be taught. Overall, this study tries to give insights into the practical use of SMT in translator training.

Gonzalez Pastor (2021) experimented to discover the perceptions and attitudes of undergraduate translation students towards MT and she reported students are generally positive about MT after they receive training on MT. “Undergraduate students show general positive attitude towards MT after the training and the completion of activities, which were positively assessed by respondents. Generally, translation students view MT as a versatile tool that can be helpful for multiple purposes.” (p.57) Based on this study, it is possible to express that receiving training about MT might change the perceptions of MT users. This also brings the training of MT to the forefront in terms of fully understanding its benefits, challenges, and how to best benefit from it.

Zhang (2023) emphasized that MT has been introduced relatively in recent times in tertiary education through specialized courses for translation students. He explained that

much research focused on the perceptions and attitudes of postgraduate students or the ones who are towards senior level classes, and the undergraduate students who are in the earlier levels of their education went overlooked. He tried to explore the perceptions of undergraduate students who were at the early stage of translator training through qualitative questionnaires. He conducted a questionnaire on sophomore students and found that students with little or no MT knowledge were relatively aware of the potential benefits and challenges of MT without any proper training. No student reported using MT output for post-editing. Instead, they leveraged from MT output to understand terms, slang, fixed language combinations, etc. This study can be interpreted as that translation students even at the early stages of their education tends to use MT, yet they are cautious enough to not fully relying on MT output. Instead, they use MT as an aid tool.

Çetiner and İşısağ (2019) aimed to understand the attitudes and perceptions of undergraduate level translation students towards machine translation post-editing (MTPE). This study revealed that the students' attitudes changed after the training, and they had a positive attitude towards using MT while stressing the limitations of MT especially in literary domains. This study also suggested that "a course on Post-Editing within the curriculum of translation programmes could be an appropriate step not only to dissolve the negative perceptions of students about Machine Translation but also to determine the limits of Machine Translation by focusing on the pre-editing works, as well. (p. 119)

Aslan (2023) analyzed the perceptions of junior and senior translation students through a questionnaire. He explained that the students had some knowledge about MT and they were aware of the benefits of using MT such as saving time, smoothing the translator's job, and enhancing translation competence. However, he found out that only one-third of the students had sufficient knowledge on MT and only partially. He concluded that translation technologies were used for translation and other language-related purposes. "It is possible to use these tools effectively and to get the desired efficiency, not by chance, but with an appropriate curriculum that uses certain methods and techniques that are framed pedagogically." (p. 210) This statement brings out the need for designing a course for translation students to better leverage from MT, and for this purpose translator trainers need to keep up with the advances in translation technologies and update their course content in line with these advancements.

1.3.3. Studies on Translators' Perceptions of MT

Professional translators' views about MT are of course has got interest by many researchers. Fulford (2002) examined how freelance translators perceived and took advantage of (MT), as well as how were their experiences and training requirements with regard to MT. The study explored the attitudes towards MT among translators, their practical experiences, and the specific training needs they may have expressed regarding MT. This research is significant in terms of understanding how MT affects professional translators and how training programs can better support them in integrating MT into their workflow effectively.

Lesznyák (2019) investigated how Hungarian translators working within the European Commission viewed neural machine translation (NMT) through structured interviews. Lesznyák emphasized that "The translators have widely divergent views on the use and usefulness of neural machine translation and varying practices when it comes to integrating it into their work." (p. 16) The study concluded that translators could recognize typical errors and they thought NMT was helpful for their translation work. However, they wanted to keep the control of the job considering the crucial drawbacks of NMT.

Macías et al. (2020) studied the usefulness of MT in a migratory context analyzing the translators' perceptions about MT and post-editing. This study showed that most participants agreed that MT results were acceptable yet needed post-editing. Participants also asserted that seeing the source text was essential to perform post-editing. This case was supported with an explanation: "participants listed numerous advantages for using the source text, including being able to identify translation errors, such as omissions, contextualizing the text or avoiding terminological, grammatical and syntactical errors." (p. 73) The idea of needing the source text to be able to perform post-editing raises another question related to post-editing the raw data obtained from an MT software: Should post-editing be performed bilingual or monolingual? This question will be elaborated on later. The participants also pointed out that clearly provided pos-editing guidelines would be required to satisfactorily perform post-editing.

"The findings of the current study state that the participants were generally negative about machine translation and post-editing, but they were aware that both tasks are gaining popularity in the translator professional market. However, the need of the

human translator cannot be avoided as, even if the machine translation engine results are similar to a human translation, they still need to be post-edited to correct terminological, grammatical and syntactical errors. Participants also highlighted the importance of having access to the original texts when performing post-editing tasks. At the same time, they required detailed guidelines or instructions if post-editing tasks have to be performed. Although the results are limited in some way, the study reflects how participants are aware of the place machine translation and post-editing task are starting to take place within the third sector.” (Macías et al., 2020)

Gaspari et al. (2014) compared the real and perceived effort and time required for post-editing, conducting research on experienced media professionals through a questionnaire. This study was one of those with a focus on “productivity” of MT while producing translations. He discovered a bias in favor of translating from scratch across various perception levels such as speed, effort, and preferred working method. Although perceptions of speed and effort somewhat align with actual improvements, the preferred working method consistently favored from-scratch manual translation. This situation suggested a persistent skepticism towards the benefits of post-editing, regardless of real productivity gains. (p. 70)

1.3.4. Research on the Perceptions of Translator Trainers on MT

There is not much research on the perceptions of translator trainers regarding MT. One of the pioneering studies was conducted by Rico and González Pastor in 2022. Their study was titled “The role of machine translation in translation education: a thematic analysis of translator educators”. In this study, the beliefs of translator trainers toward the introduction of MT into translation courses are investigated. Although the study was carried out with a small group of translator trainers working at the same university, this study is of great importance in terms of giving voice to translator trainers about MT and its practice in translation courses. This study points out to “valuable data regarding MT literacy, agency in MT, and the role of the translator, the categorization of MT and how MT might contribute to translation competence development”. (p. 192) In an attempt to contribute to the progress of the MT pedagogy, the authors put forward some suggestions:

- “• Translator educators should receive formal training in MT (both theory and practice) so that they can incorporate this knowledge into their translation courses.

- Overall teaching of MT should look beyond the instrumentalist agenda that concentrates on the technical properties of the tool. This way educators will be able to share with students a holistic view of MT, one that evidences how the human factor is key in the translation process. This will also help students understand the shift from the traditional translation environment (translation-edition-revision) to the new model of MT+post-editing.
- Learning about MT should mirror what is already happening in the professional landscape, in other words, translation assignments should include the use of MT at some point. This implies the need for a systematic approach on how best to teach MT, relating it to competence models that go beyond the instrumentalist agenda.” (p.193)

These are quite sound and valuable suggestions in terms of learning and teaching of MT by translator trainers.

Sánchez-Castany (2023) explored how trainers in translation education perceived the integration of technologies into their teaching practices through semi-structured interviews. She stressed that there was a gap between the ever increasing technological demands of translation industry and training on translation technologies in undergraduate courses. She aimed to reveal the challenges faced by translator trainers in Spain who were trying to integrate translation technologies into their courses. She found that integration of these technologies was low for many reasons such as “resources available, trainers” skills in TT, curriculum planning, students” relationship with technology and trainers” relationship with their institution”. (p. 485) “Moreover, in many cases, even if trainers are willing to introduce TT in their practical translation lessons, they encounter many obstacles that are not always easy to overcome, as those usually do not depend directly on them. (p. 492)

CHAPTER 2: METHODOLOGY

This chapter covers subsections about how the research was designed, the profiles and selection of the participants, data collection instruments and process, and the data analysis instrument and the analysis process.

Research Design

This research is based on a questionnaire which is a method of quantitative analysis. The questionnaire was developed through Google Forms and was open between April 23, 2024, and May 10, 2024. The questionnaire was shared online with the prospective participants through email.

The questionnaire comprises multiple-choice and open-ended questions. The questions of the questionnaire were developed by the researcher herself. Before preparing the questions, a literature review was carried out and several topics were found more relevant to this study. These topics were divided into three main categories: MT literacy, translation pedagogy, and the future outlook of the translation profession. These three categories were highlighted in the questionnaire as section titles. Then, other topics were integrated under these three categories as separate questions. In addition to the three main categories, another category, which is demographics, was added to the questionnaire to get some idea about the demographic information of the participants. This section was thought to be helpful while evaluating the questionnaire results.

Participants

Participants of the study are the translator trainers teaching in the Departments of Translation and Interpreting (Studies) in Türkiye. These departments are giving undergraduate education for future translators. The participants were invited to fill in the questionnaire online through an email specifically sent to each participants' inbox. The email information of the participants was collected online at the Higher Education Program Atlas (YÖK Atlas) website provided by the Council of Higher Education (YÖK)¹. YÖK Atlas is a website where one can find relevant information regarding the higher education institutes in Türkiye. On the website, one can see the information of the academic staff of any university and any program among other information. So, the

¹<https://yokatlas.yok.gov.tr/>

website was very helpful in reaching the email addresses of the translator trainers. The profile of the participants to be invited to fill in the questionnaire was not limited on one condition: they must be teaching translation. So, the research assistants were not included in the email list prepared for the study. Also, the participants were allowed to fill in the questionnaire in Turkish upon their choice to allow them to feel comfortable while responding to the questions. The participants were coded as “P1” for Participant 1, “P2” for Participant 2, and so on.

Data Collection

This study leverages from a questionnaire which is a kind of quantitative data collection instrument. Brown (2001) defines a questionnaire as “any written instrument that presents participants with a series of questions or statements to which they should react either by selecting from existing possibilities or writing out their answers”. (p. 6) This method was chosen for the data collection because it was thought that reaching enough number of participants to represent the population of translator trainers could be realized more effectively with a questionnaire. If an interview was conducted, the number of participants would be less, thus the interview group could be insufficient to make interpretations of the general population of translator trainers. So, a questionnaire was thought to be more appropriate for the purposes of this study. The questionnaire was self-administered. The self-administered questionnaires are generally sent and received online, allowing each participant to fill in the questionnaire whenever and wherever they like. (Brown, 2001). However, there are several limitations of the self-administered questionnaires. Brown (2001) lists them as “(1) they often get a low return rate; (2) they must be completely self-contained and self-explanatory because on-the-spot clarification is not possible; and (3) you do not know the conditions under which the questionnaire was filled out.” (p. 6)

It is possible to explain the data collection method of this study is a self-administered questionnaire conducted on translator trainers in Türkiye. In line with the nature of a questionnaire, the questionnaire applied for this study covered both multiple-choice questions and open-ended questions. The open-ended questions were thought to be more effective in terms of getting to know the perceptions of the participants. However, as mentioned earlier, this comes with some limitations. The participants may not clearly understand the questions and they do not have a chance to ask for clarification while

filling out the questionnaire. The second problem is that the participants may complete the questionnaire with less motivation to give enough information about their views due to many conditions that are almost unique to each participant. And last, you may not reach enough participants for your study. This was almost the case in this study. For creating the research sample, 250 translator trainers were invited to participate in the study. It is thought that there are around 400 translator trainers in Türkiye, and the number of participants invited to the study was over half of the total number of translator trainers. However, the attendance was not as high as expected: only 52 translator trainers participated in the study.

Data Analysis

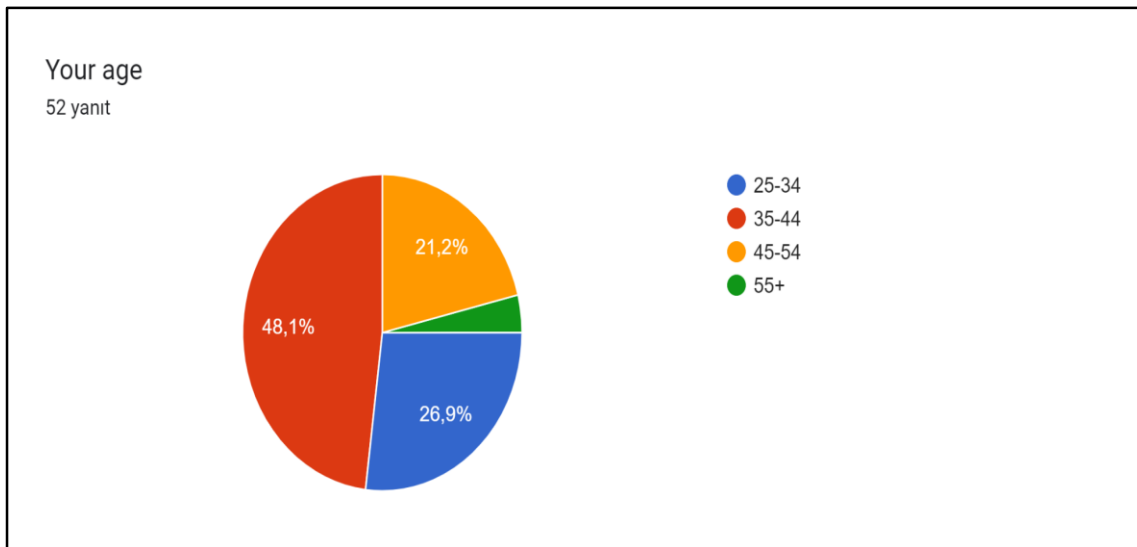
The data collected through the online questionnaire will be analyzed through two analysis methods: descriptive statistics and thematic analysis, respectively for analyzing multiple-choice and open-ended questions. Jessica Briggs Baffoe-Djan and Sara Ashley Smith state that descriptive statistics' main function is "to enable researchers to meaningfully describe and summarize quantitative data sets." (p. 398) Therefore, it will be possible to give demonstrative information about the participants of the study and their opinions about machine translation. In this study, the descriptive statistics will mostly be demonstrated as frequency distribution charts. Büyüköztürk (2011) states that the frequency distribution charts are useful for making a general description of the data collected through experimental and survey research, making it a suitable method for this study. When it comes to the open-ended questions, the thematic analysis method will be utilized. The thematic analysis is accepted as "an umbrella term, designating sometimes quite different approaches aimed at identifying patterns ("themes") across qualitative datasets" by (Liamputtong, 2019). The patterns of shared meaning will be sought to explore the potential themes in the responses provided by the participants to the open-ended questions of the questionnaire.

CHAPTER 3: FINDINGS AND DISCUSSION

This chapter covers the findings of the questionnaire administered to the translator trainers in Türkiye and a discussion of the findings in terms of the developments in MT and its reflections in the translation classroom.

A total of 52 participants responded to the questionnaire. Thirty-eight of the participants (73.1%) were female while the remaining 14 participants (26.9%) were male. Though no particular strategy was adopted to balance the gender distribution of the participants, this distribution is thought to be not surprising considering that the female translator trainers generally outnumber the male ones in the Departments of Translation and Interpreting (Studies) in Türkiye.

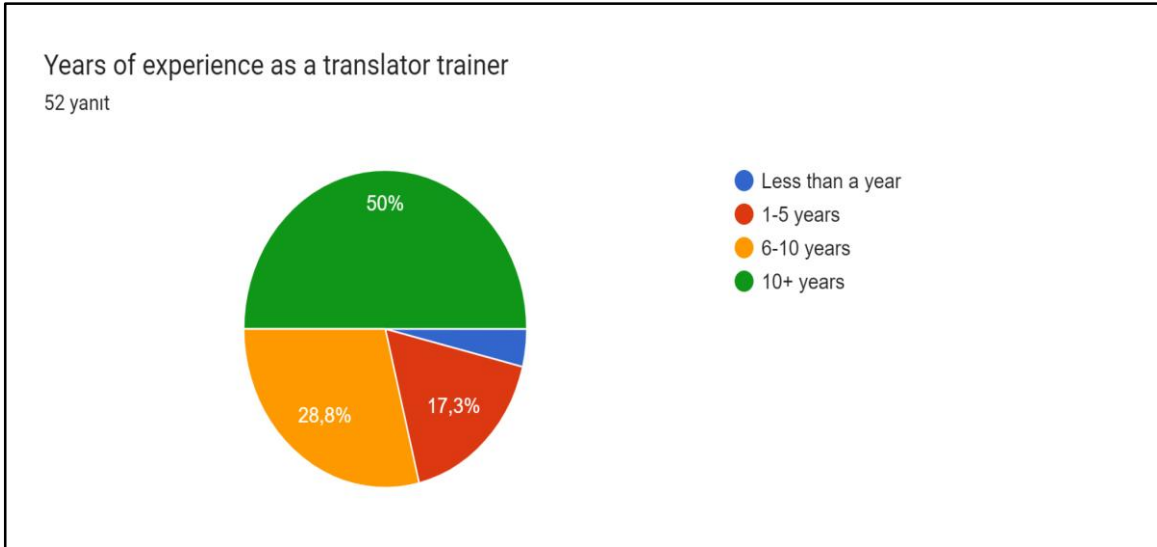
48.1% of the participants are between the ages of 35-41. 26.9% of them are between 25-34 and 21.2% are between 45-54. Only 3.8% of the participants are over 55. The age distribution of the participants is provided in Graphic 1.



Graphic 1: Age Distribution of the Participants

Source: Created by the author via Google Forms questionnaire.

The experience periods of the participants are demonstrated in Graphic 2. According to Graphic 2, half of the participants have more than 10 years of experience in translator training. And, 28.8% of them have 6-10 years of experience. 17.3% of them have 1 to 5 years of experience while only a small percentage (3.8%) have less than a year of experience. This graphic clearly shows that most of the participants have taught translation for a long time and they have lots of experience of teaching translation.



Graphic 2: Distribution of the Experience Periods of the Participant

Source: Created by the author via Google Forms questionnaire.

The translator trainers stated the language pairs they taught as in Table 1. The table shows that English-Turkish is the most prevalent language pair taught by the translator trainers. This may be because English is the lingua franca and therefore Departments of English Translation and Interpreting are more common in Türkiye than the other departments working with other language pairs. Also, one participant gave an irrelevant response to the question, which was not evaluated.

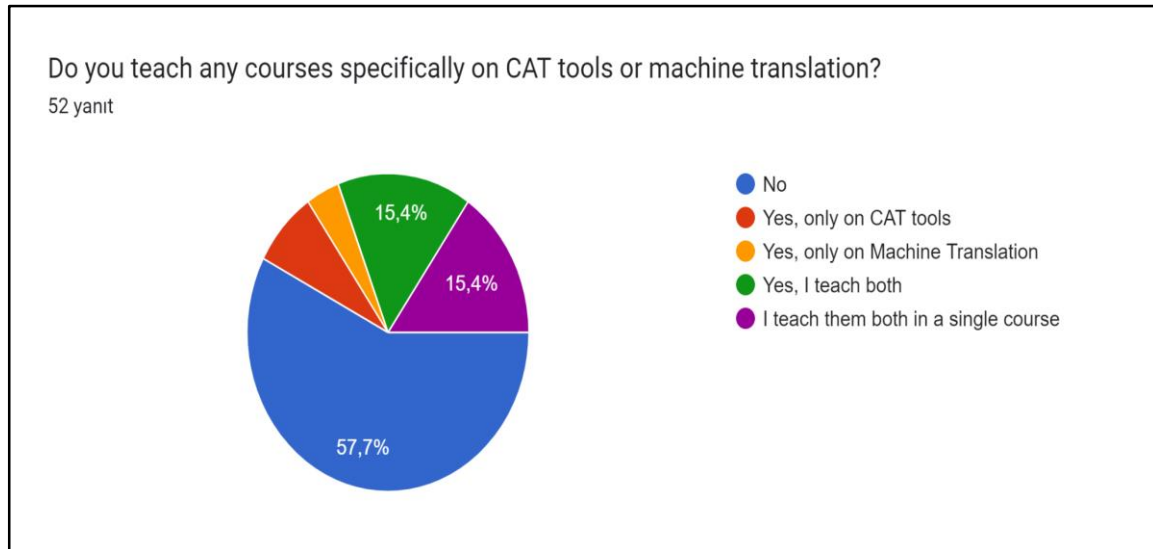
Language Pair	Number of Translator Trainers*
English-Turkish	45
French-Turkish	4
German-Turkish	3
Spanish-Turkish	1
Chinese-Turkish	1

Table 1: The Language Pairs Participating Translator Trainers Taught

Source: Created by the author.

*As two translator trainers expressed that they taught both “English-Turkish” and “French-Turkish” and one trainer expressed teaching both “English-Turkish” and “Spanish-Turkish”, total number of the translator trainers expressed in the table outnumbers the real number of the participants. Also, one participant was not included in the table due to expressing not the language pair they taught, but their specialization area.

The participants were also **asked whether they taught any specific course on CAT tools or MT** to get an overall idea about the experiences of the participants regarding translation technologies. Their responses are shown in in.

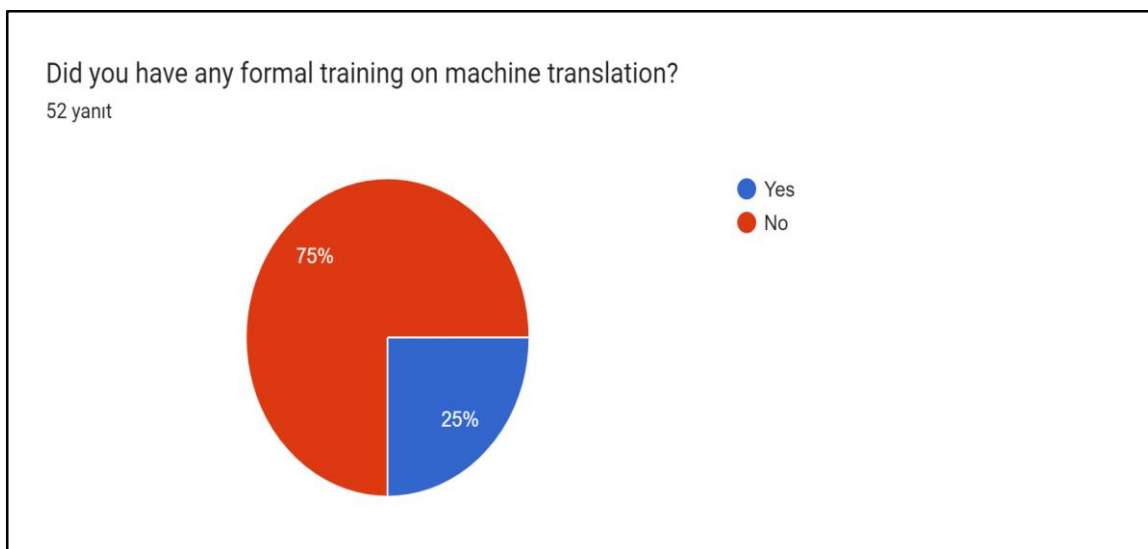


Graphic 3: Distribution of the Participants' Teaching Experience in CAT Tools and MT

Source: Created by the author via Google Forms questionnaire.

From all 52 participants, 30 of the participants (57.7%) stated that they did not teach any course on CAT tools or MT. Four of them (7.7%) explained that they teach courses only on CAT tools. Two of them (3.8%) expressed that they teach courses only on MT. Eight of them (15.4%) exclaimed that they taught courses on both CAT tools and MT. And eight of the participants (15.4%) asserted that they taught CAT tools and MT in a single course. These percentages show that more than half of the participants do not teach any course on CAT tools or MT. However, their perceptions of MT will be of great significance for this study to better understand what they think about MT and their experience with MT as not MT experts of this field.

In the second section of the questionnaire titled MT literacy, **the translator trainers were firstly asked whether they received any formal training on MT**. As can be seen in the Graphic 4, 75% of the participants claimed they did not get any formal training while the remaining %25 expressed they received some kind of formal training on MT.



Graphic 4: Distribution of the Participants with Formal Training on MT

Source: Created by the author via Google Forms questionnaire.

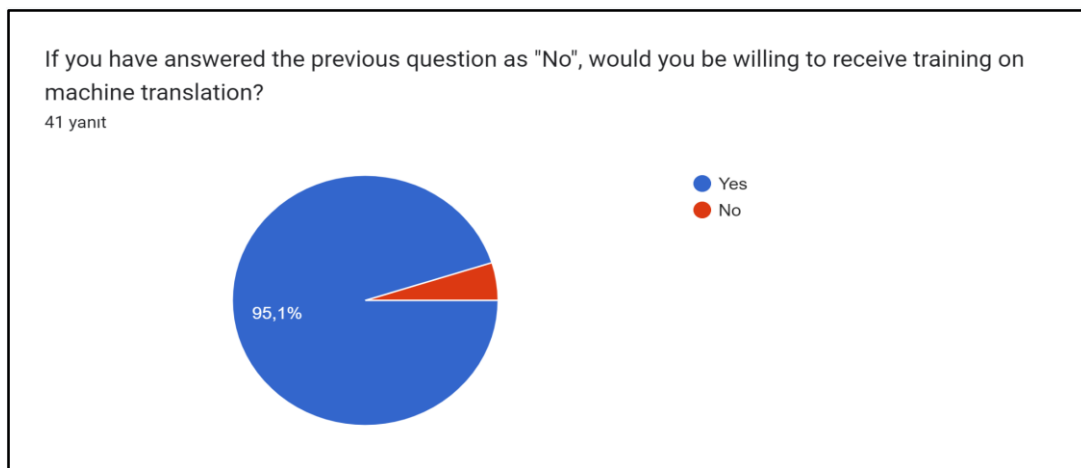
Considering the skyrocketing developments in MT that have emerged in the last decade, the outcome of the answers to this question is not very surprising. This is because probably there were no formal training on MT in the translation departments when most of these participants were getting education. However, it is pleasing to see that at least a quarter of the translator trainers have undergone formal training on MT.

Then, **those who expressed receiving a formal training on MT (39 participants) were asked to provide the sources of training they got.** However, only 15 participants explained the source of their training. Three of the explanations were irrelevant, thus not presented below. Valid responses by the participants refer to many sources:

“TAUS - Machine Translation PE Training (3 participants),
SDL (now RWS) Post-Editing Training (3 participants),
A PhD course (2 participants),
For professional purposes in the sector,
I trained myself by experimenting and reading instructive material,
A BA degree localization class,
A BA degree CAT course,
A webinar by Memsource (now Phrase) on MT,
A university workshop,
In undergraduate education”

Two participants explained having training provided by both TAUS and SDL (now RWS), thus the number of participants who provided relevant answers exceeds the total number of responses. The answers lay out that TAUS and RWS Post-Editing Trainings are the most preferred formal training sources by the participants. It is also obvious that a great number of the participants only got a course during their bachelor's or doctorate degree education. One of the participants asserted receiving training for professional purposes in the sector yet did not identify the source of the training. Another participant explained that they learned what they learned with their own efforts i.e. by experimenting and reading instructive material. Apart from these a webinar held by Phrase company and a university workshop were mentioned as the sources of formal training on MT.

And **those who explained they did get no formal training on MT were asked whether they would be willing to receive training on MT**. A total of 41 participants answered this question. As can be seen in Graphic 5, 39 participants (95.1%) expressed their willingness to receive training on MT while only two participants were reluctant to receive any training on MT. These answers can be interpreted as such that almost no one of the participating translator trainers see any barrier between themselves and MT which indicates a positive result in terms of translation pedagogy.

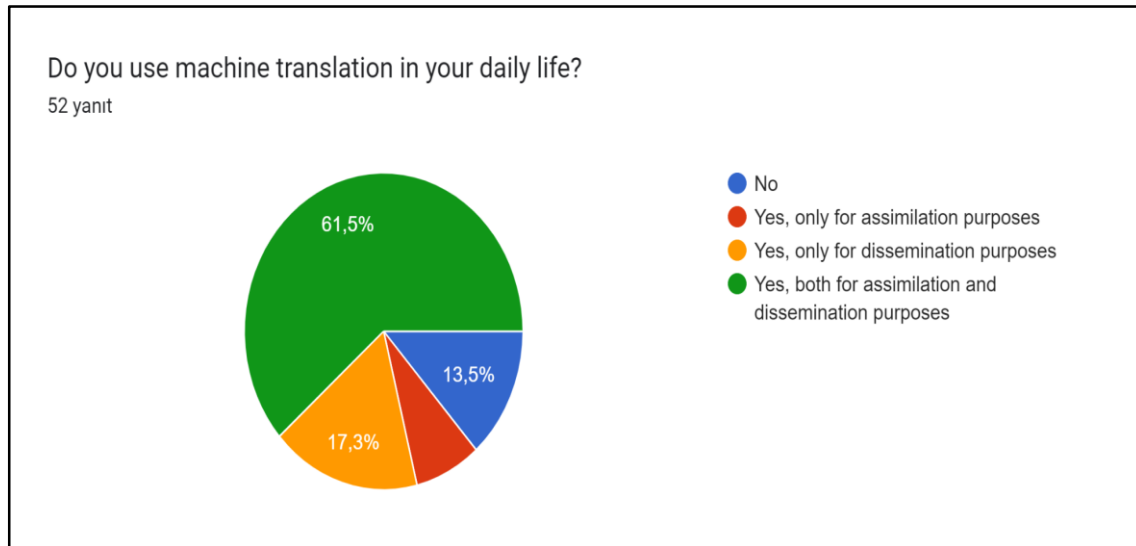


Graphic 5: Distribution of the Participants According to Their Willingness to Receive Training on MT

Source: Created by the author via Google Forms questionnaire.

Another question was raised regarding the **MT use of the participants in their daily lives**. The participants were asked whether they used MT in their daily lives and the answer options were designed to get a bit more information about their use tendencies. Also, some explanation was provided under the question to give the participants who are

not familiar with the assimilation and dissemination concepts in translation. So, these two concepts were briefly summarized by the researcher herself as: “**Assimilation** means using MT to translate a text with an MT software to only get the gist of the source text. And **dissemination** refers to creating a translation that needs post-editing before published.”



Graphic 6: Distribution of the Participants According to Their Daily Use of MT

Source: Created by the author via Google Forms questionnaire.

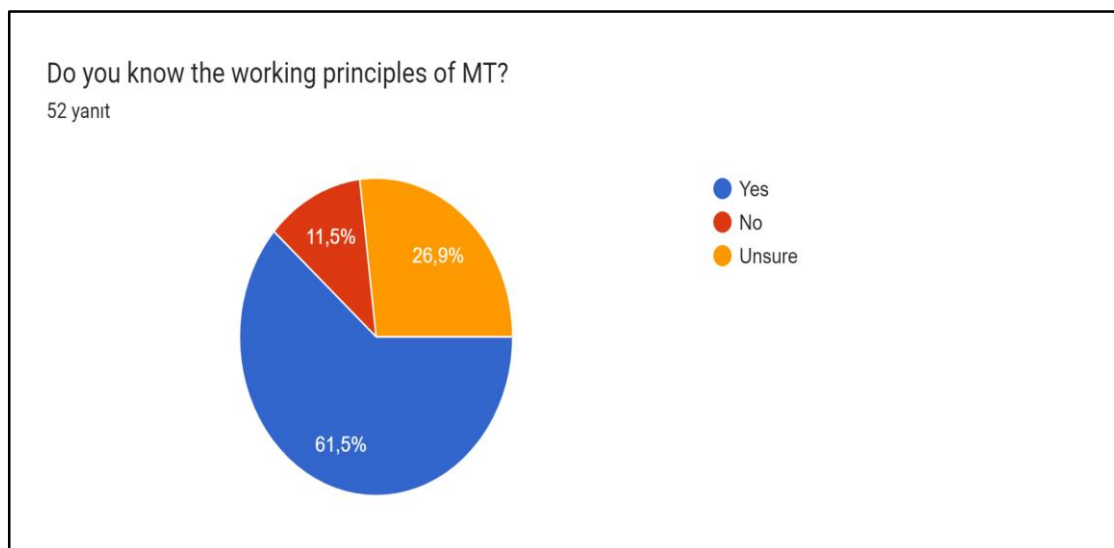
More than half of the participants explained that they have used MT both for assimilation and dissemination purposes. This can be interpreted as that the translator trainers are not keeping themselves away from the developments in the MT. Therefore, it is also possible to say that they have a positive attitude towards MT.

13.5% of the participants stressed that they did not use MT in their daily lives. 7.7% of them expressed they used MT only for assimilation purposes which means they did not benefit from MT for professional purposes, they just wanted to have some idea about the foreign text. On the other hand, 17.3% of the participants expressed that they use MT only for dissemination purposes. And, the last 61.5% of the participants pointed out that they leveraged MT both for assimilation and dissemination purposes. This distribution is thought to be balanced. However, no use of MT is thought to be somehow surprising.

The next question was designed to understand **with which software the participating translator trainers were familiar**. The participants were asked to list the names of the MT software they knew. Some of the responses were to the point with extra identifiers such as “Generative Ai (“deep L”, “chat gbt”) NMT (“Google”, “systran”, “bing”,

"Microsoft 365")" and "NMT Technologies (Google Translate, Deepl)". However, some participants listed the names of CAT tools such as "Smartcat, Trados, Phrase Matecat, MemoQ". These responses were not shocking because this question was present as an open-ended question to see if all the participants would list the names of some MT software and they are aware of the differences between a CAT tool and an MT software. Even some of the participants expressed that they do not have any idea about the MT software.

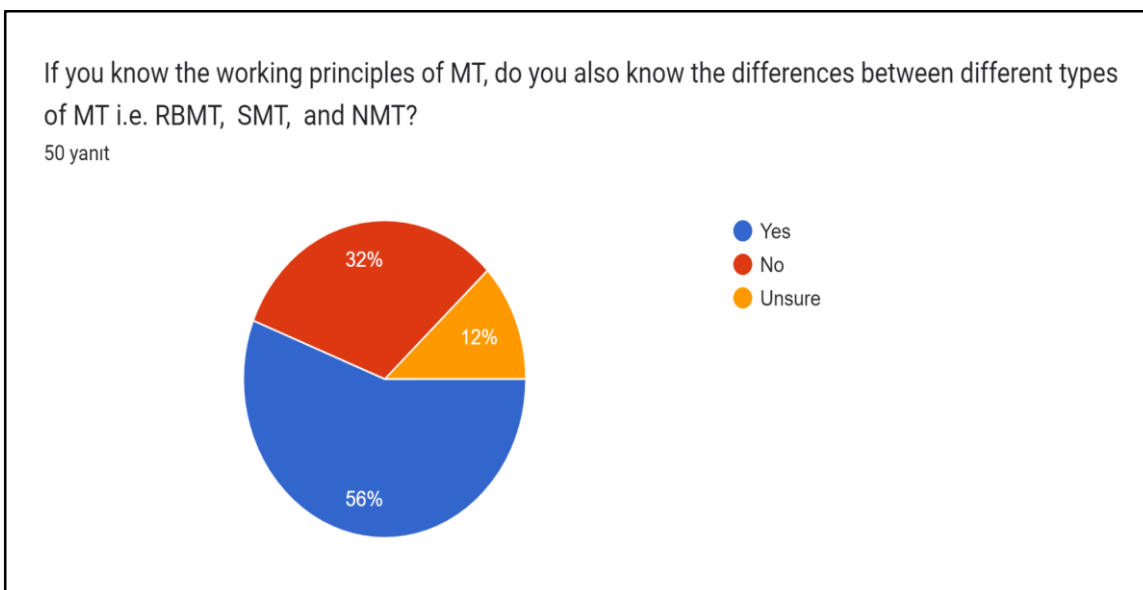
When **the participants were asked whether they knew the working principles of MT**; 61.5% of the participants said "Yes", 11.5% of them said "No", and the remaining 26.9% of them expressed that they were "unsure" about their knowledge of the working principles of the MT.



Graphic 7: Distribution of the Knowledge of the Participants About the Working Principles of MT

Source: Created by the author via Google Forms questionnaire.

This graphic demonstrates that the participating translator trainers are not only general users of MT. They know the working principles of MT, which is positive for the translation pedagogy. The number of those who are unsure about their knowledge of the working principles of MT brings out a need for raising awareness of translator trainers about the issue.



Graphic 8: Distribution of the Knowledge of the Participants About the MT Types

Source: Created by the author via Google Forms questionnaire.

Those who asserted knowing the working principles of MT were **asked whether they also know the differences between different types of MT**. 56% of the participants answered this question as “Yes while 32% of them answered “No”. The remaining 12% of the participants were “unsure” about their knowledge about different MT types. These percentages show that most of the translator trainers who took part in this study have more than general knowledge about MT and they know some more in-depth knowledge about this topic. Those who are unsure probably did not get any formal training about MT and do not exactly know how much they know about these subject.

The first open-ended question was **“Do you have detailed knowledge about the benefits and limitations of MT? Could you please provide some detail?”** Four participants acknowledged that they do not have detailed knowledge about the benefits and limitations of MT while one participant is not sure about it.

The answers given about the benefits of MT can be categorized into four themes. These themes are identified as efficiency, availability, quality, and facilitation. To understand the themes identified, it is better to look into some of the statements of participants below:

P3: “MT helps translators produce better quality of outputs in shorter time.”

P7: “... it is inevitable to use translation technology to be quick and to save time”

P:38 “Integration of MT to CAT helps translators translate the text in a shorter time.”

As translation technology tools are also known as productivity tools, it seems that statements of the participants also support this view. Since the speed of translation is accelerated with these tools and this increase in the speed can increase the productivity in turn, the productivity gain can yield in a translation efficiency. The benefits and limitations expressed by the participants are given below:

Benefit - Availability: Gives access to multilingual content, fast and cheap, easy to use. (P3, P27, and P49)

Benefit - Quality: Gives successful outputs in specialized areas, the overall quality of raw output has been increasing day by day, still needs proper post-editing conducted by human translators. (P16, P31, P43)

Benefit - Facilitation: assists in terminology, can be used for extending vocabulary, might make the methods of teaching translation much more smooth and fun in the classroom, can be used for paraphrasing exercises for various text genres in translator training, offering alternatives (allows the translator to access many alternatives with a single click), gives a draft translation to be used after post-editing, enables the translation of photographs, voices, documents and websites, protects the forms of the translated documents and makes it easy for translators like CAT. (P1, P9, P26, P29, P40, P45, P51)

Benefit - Efficiency: Time-saving (fastens the translation process, provides speed, integration of MT to CAT shortens the translation time), cost-effective. (P1, P13, P34, P52)

Limitation - Effort: Might require extensive post-editing, post-editing requirements. (P17, P47)

Limitation - Quality: Quality variability, grammatical errors (cannot correctly identify the subjects and complement in some complex sentences), accuracy problems, problem of reliability (gives unstable outcomes, it is not possible to trust MT output completely), failure in providing successful outputs in literary texts especially containing metaphoric and sonorous language, text type and the language used matters, MT outputs might be misleading or unclear especially in lesser used languages such as Turkish-English, presents insufficient performance with polysemy, meaning management, nuances and cannot provide different lexical alternatives, requires post-editing. (P2, P6, P11, P23, P26, P31, P33, P42, P44, and P50)

Limitation - Cultural Elements: Difficulty in handling ambiguity and cultural expressions, may result in mistranslations when cultural elements and the use of a complex language are involved, cultural aspects are challenging, cannot understand irony or implications. (P10, P16, P21, and P37)

Limitation - Context: context sensitivity, problem with understanding context (AI has difficulty deciphering the intertextuality and understanding the references in the texts, MTs may not always grasp the context and cultural nuances, may create incomprehensible structures in terms of context). (P5, P18, P24, and P38)

Limitation - Hinderance of Learning: deters language learning. (P47)

Limitation - Lack of Creativity: lacks creativity itself, MT suggestions limit the translator's creativity. (P14, P39)

P47: "MT suggestions limit the translator's creativity and to see other or sometimes better options, especially for students. Blind faith in MT suggestions for students leads to worse translation and limits to question the accuracy or functional appropriateness of the choices. Feedback given to MT can be misleading. MT suggestions are like shortcuts for students; thus, they block their learning process. MT suggestions are not consistent in terms of terms or vocabulary, even in a whole text."

This quotation hints at some hesitation regarding the use of MT by students. It is thought that MT use by students may hinder their creativity in terms of translation and block their learning process. This hesitation seems sound as it is known that students who have not gained translation skills first might be too dependent on the MT outcome and they may not be able to see the problems in the TT. Therefore, it needs to be assured that before students are allowed to use MT, they must have gained translation competences and then the knowledge about MT so that they do not have "blind faith" to the MT outcome.

The next question was **"What would you say regarding the quality of MT outputs?"**

The participants were asked what they would say about the quality of MT outputs. Two participants did not deliver any opinion about the quality of the MT outputs.

When the answers were analyzed, the themes including acceptability, and adequacy were identified.

Twelve participants assessed the quality of MT outputs positively. Their views were based on the improvement of the quality of the MT outputs compared to the past. They

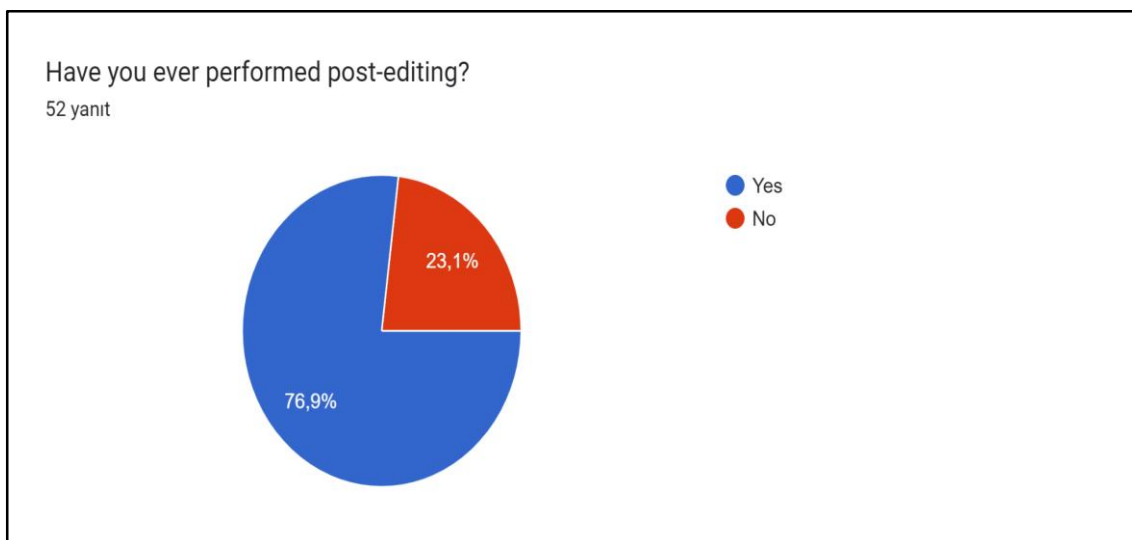
emphasized that the quality of the MT outputs is getting better and better. Another reason for their positive opinions was the acceptability of the MT outputs. P35 said the quality of the outputs is “good enough”. P41 stressed that “Generally, I range it 75-85% correct.” Another answer supporting these opinions came from the P48. P48 said that “Since I just use it as something that eases my work process, I mostly think that it produces high-quality outputs.”

The negative opinions put forward by nine participants were mostly about the inadequacy and unreliability of the MT results. P37 expressed that “It might contribute to faster and productive translations but end up with unqualified translations, which need thorough post-editing.” P34 said “I do not think [the quality of MT outputs] are reliable.”

There were other opinions which could not be fit into negative or positive opinion categories. These opinions expressed that there are several variables affecting the quality of the MT outputs. These variables can be summarized as follows: text types, language pairs, the database used by the MT software, MT engine itself, and linguistic features of the source texts.

Post-editing was the most emphasized theme by the participants. Sometimes they were positive about the quality of the MT results, but they said post-editing is needed. Sometimes they were not satisfied with the MT results and they emphasized the necessity for a second check of the MT results by a human translator. The emphasize on the need for post-editing stressed by both positive and negative viewers as well as those who supports the idea that the quality of the MT outputs rely on different variables brings the mind that post-editing is a requirement for getting high-quality MT results. Therefore, it is thought to be necessary to have a knowledge of the post-editing to be able to use MT for getting satisfactory results.

In another question, **the participants were asked whether they have ever performed post-editing.** According to the responses 76.9% of them expressed they performed post-editing while 23.1% of them did not (see Graphic 9). The quite high percentage of participants who asserted having post-editing experience is thought to be an indicator for translator trainers’ closeness to MT. They are not only general users of MT, but also they know about the post-editing process, and they have tried it before. This is such good news that trainers can at least talk about MT and post-editing even if they do not actively teach them in the classroom.



Graphic 9: Distribution of the Post-Editing Experience of the Participants

Source: Created by the author via Google Forms questionnaire.

Then, the participants were addressed the question **“If you have ever performed post-editing, what can you say about the post-editing process (the challenges you faced, the things you had to pay special attention, etc.)?”**

Challenges	Frequency*
Terminology	10
Contextual use of vocabulary	2
word choices	1
Non-preedited complex sentences	1
Grammar	3
Nuances	3
Cultural elements	8
Genre of the text	2
Text type	1
Purpose of the text	2

Subjects' gender (and pronouns)	1
Pronouns	1
Syntax	2
Fluency	1
Unfamiliar structures	1
Coherence	1
Meaning plausibility	1
Context	2
Idioms and metaphors	1
Consistency	1
Meaning transfer	2
Linguistic structures	1
Segmentation	1
Punctuation	1
Language use	1
Proper names	1
Place and food names	1
Misspelled words in ST	1
Idioms and proverbs	1
Time issues	1
Tone and style	1

Omissions	1
Cohesion- coherence	1
Consistency in terminology	1
Shifts in phrases	1
Providing a clear content	1
Situationality	1
Artificial structures	1

Table 2: Frequency of the Points Given Attention During Post-Editing Process

Source: Created by the author.

*As many participants reflected more than one point, the total number of the points listed exceeds the total number of participants.

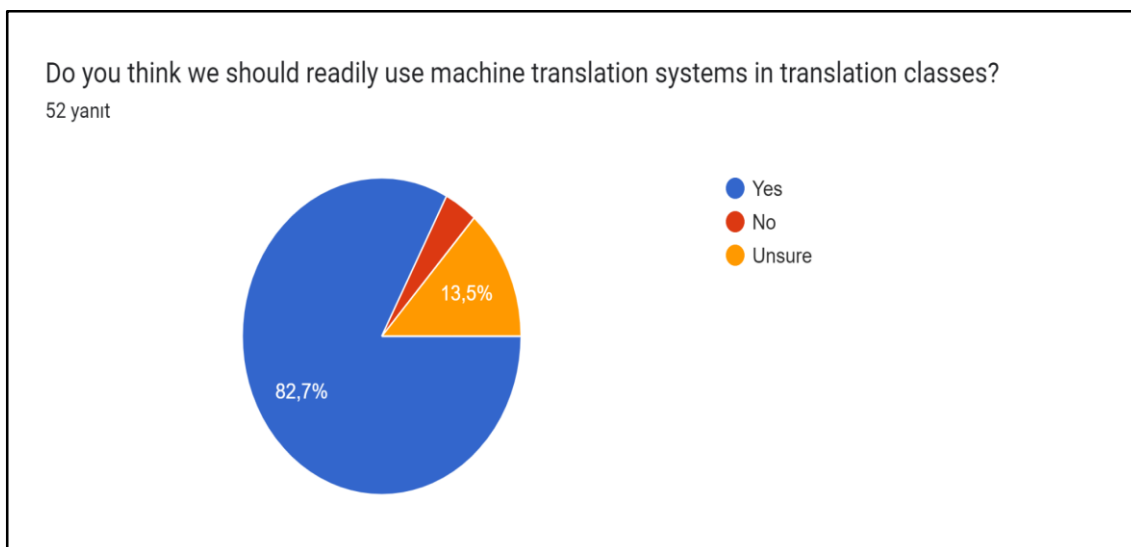
Some participants suggested that if the source text is prepared for machine translation, then the risks of mistakes can be reduced in the target text, helping to decrease the effort and time spent for post-editing. The following quotations from the participants elaborate the need for pre-editing before MT use.

P2: “If the input is not adjusted properly the output tends to be highly problematic. So most of the time I firstly adjust the input thoroughly. During the post-editing I know that I may have problems with the predicatements and I pay attention to those mostly.”

P19: “Post editing needs pre editing first. The text should be prepared for the MT translation to reduce mistakes. If not, it takes longer to edit the text. An existing tm and TB can make the process easier.”

P51: “Cultural-specific items, proper names, sometimes idioms and proverbs, place and food names, and misspelled words in ST are the most frequently faced challenges in MT outputs. Therefore, I think that a detailed pre-editing would help translators detect and eradicate potential challenges in post-editing process.”

In line with the table and the quotations taken from the responses of the participants, it is obvious that terminology, cultural elements, nuances, and grammar are the most common points paid attention to during post-editing process.



Graphic 10: Distribution of the Participants According to Their Views on the Immediate Use of MT in Classes

Source: Created by the author via Google Forms questionnaire.

Graphic 10 presents the distribution of the participants according to their views on the immediate use of MT in classes. 82.7% of them answered “Yes” to the question “**Do you think we should readily use machine translation systems in translation classes?**”. 3.8% of them said “No”. And, the remaining 13.5% designated that they were “Unsure”. Those supporting the immediate use of MT in translation classroom are probably more knowledgeable about MT, its use, and its benefits and aware that MT knowledge and use are required in professional life. Therefore, MT needs to be used in translation classes and students should be prepared for professional life more equipped. Participants who are unsure about the immediate use of MT in translation classes are thought to have some hesitations. Though the real reasons of these hesitations are not known, this brings to mind some points. One of them is maybe the participants do not know much about the concept and its practice at a professional level and this might be restraining them from advocating immediate use of MT in the classroom. Another reason is thought to be hesitation regarding the students’ standpoints. In other words, these trainers may be hesitating because students who have not gained translation skills might have problems with using MT. So, it needs to be thoroughly evaluated before deciding to use MT immediately in the classroom.

When the participants were asked **“Should the students be permitted to use Machine Translation for their assignments? Why?”** 35 of them said “Yes” while six of them said “No” (P4, P25, P37, P40, P43, P52). P5 and P28 gave irrelevant answers.

P25 explained some hesitation which can be seen below.

P25: “I think students should be trained to use MT; however, for assignments they should not be allowed to use them because they need to develop their style as translators. They should create their unique voice in translations and if they use MT they would not be able to do that.”

P15 and P48 stressed the use of MT by students depends on the course objectives and the type of the course.

P15: “Depends on the objectives of the course.” P48: “Depends on the type of the course and the tasks the lecturers ask for their students. Sometimes it is quite beneficial for students (for them to be able to use languages flexibly) not to get some help from MT.”

P32 and P36 explained that the students can use MT only as a facilitator.

P32: “Maybe for checking [one’s own translation]”

P36: “Not all but they can use them as an aid tool.”

P17, P19, and P30 draw attention to that students should gain translation competence before starting to use MT.

P17: “They can use it for draft translations if they are aware of post-editing processes.”

P19: “Only after they are familiar with fundamentals of translation. Before that, MT can lead them to simplifying their translation tasks and thus not give enough attention to details.”

P30: “To some extend. Because they have to learn have to translate by themselves. There can be some confidential papers or or sometimes using MT can be misleading. They can not practice their skills if they use MT all the time .”

P35, P39, P40, P41, P49 and P51 also pointed out the necessity for gaining translation before starting to use MT. However, they also bring attention to that as the future translators, they also need to gain post-editing skills.

P35: “Students may use machine translation in their assignments, but post editing of the final text is necessary. Simply submitting the text as it is in its raw output might lead students to be lazy during the translation process and invite plagiarism. Students

need to commit themselves to a process of specialization that allows them to perform many touches to the text as the text type allows. Preventing students from making use of machine translation would be unrealistic in the current translation market. Because we are a fast-producing, fast-consuming society. If what is expected of us in translation is to create fast and productive texts, we should evolve accordingly. Globalization and digitalization processes are important at this point. Saying that we should not use these tools is similar to the old saying that we should translate without using a dictionary.”

P39: “Yes, the use of machine translation technology is increasing, and this creates new opportunities in various sectors. In the future, professionals might learn how to utilize this technology most effectively in their careers and might even consider developing their own translation applications. Effectively using this technology can save time and reduce costs, optimizing business processes. Additionally, understanding the limitations and best use cases of machine translation technology will enable them to use these tools more effectively. Therefore, acquiring advanced technology skills and adapting these tools to their needs could provide a significant competitive advantage in their future careers.”

P40: “No. To become a good or great MTPE expert, we should teach our students to how to become a great translator first. So, to do that, we should first teach translation action and linguistic knowledge then our students can start using MT step by step. If we let them use MT before learning translation action, they won't be sure what to correct in MTPE step.”

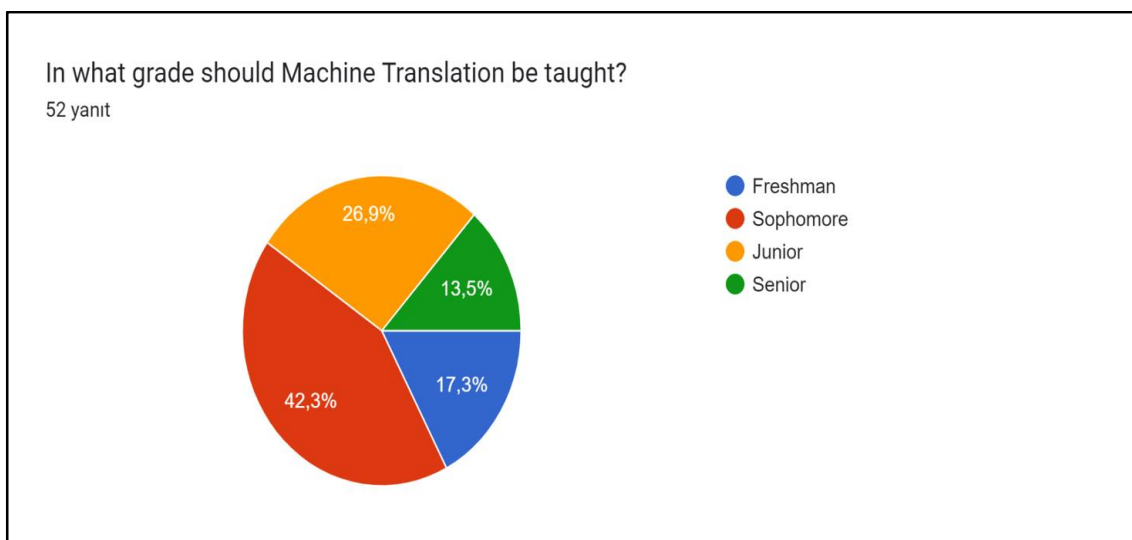
P41: “Yes, they can use machine translation on condition that they justify their use of the system and explain their own control mechanism. This method will enable them to get ready for a real-time working environment.”

P49: “Of course they should be allowed to use MT but just after being sure that they have already earned essential translation skills that enable students to translate texts without the help of MT and to pre-edit and post-edit the relevant texts effectively.”

P51: “If the instructor is sure about the fact that students know all the details about how to get benefit from MT as prospective translators it should be permitted. Because we can not challenge to the soul of time.”

Although a great number of the participants support the use of MT by translation students, there are many things to consider before allowing them to do so. First, they need to gain basic translation skills. Then, they can learn about MT and benefit from it. However, the

students should be aware of the limitations of MT so as not to be misguided by the raw MT output. Learning MT is thought to be a must for students to keep up with technological advances in the translation field and they should be ready for all necessities of professional life.



Graphic 11: Distribution of the Views on Teaching MT at School Grades

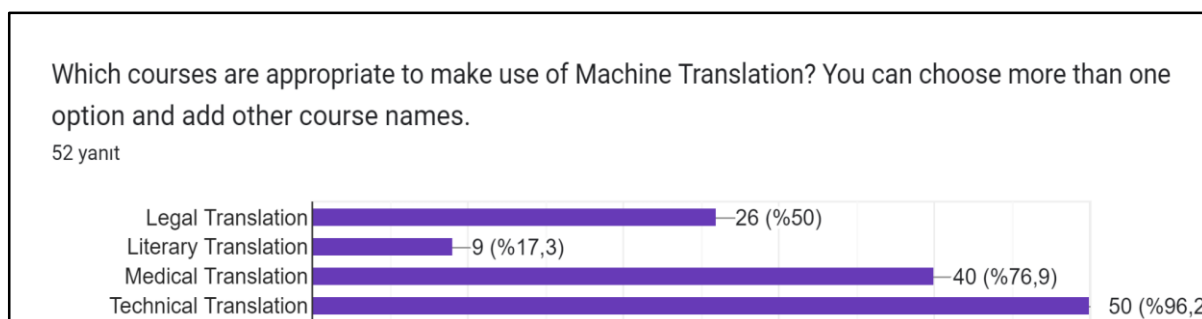
Source: Created by the author via Google Forms questionnaire.

When the translator trainers were asked **in what grade MT should be taught** to students, 42.3% of them responded as sophomore year. 26.9% of them said junior year. 17.3% of them preferred freshman year while 13.5% of them preferred senior year (see Graphic 11). This distribution shows that there is no overriding answer although those who support sophomore year are close to half of the participants. This is thought to be stemming from the different viewpoints of the participants as to the learning development of the translation department students. It is known that in the freshman year of translation departments, the students start with basic theoretical and practice-oriented translation courses. These courses are generally introductory courses where the students get the first theoretical knowledge about translation and they practice small-scale translations. Then, the number of practice-oriented courses increase and special area translation courses are presented in the coming years. So, those who preferred sophomore year were probably thinking that it was too early for the translation students who did not practice translation enough to gain translation competence to use MT. On the other hand, they are probably aware that knowledge and practice of MT is required in the professional life of a translator

and they think that it is better for the students to learn MT as early as possible but after they have gained theoretical knowledge of translation and translation competence.

Another question was **“Which courses are appropriate to make use of Machine Translation?”** The participants could select more than one option or add their own answer to this question. The predefined options were legal translation, literary translation, medical translation, and technical translation. The options were randomly presented, not in order. 96,2% of the participants selected “Technical Translation” course as eligible for benefitting from MT. 76.9% of them selected “Medical Translation. 50% of them chose “Legal Translation”. 17.3% designated “Literary Translation”. Optional suggestions by the participants included “Scientific Translation (P3, P19), Business Translation (P21), Social Sciences Texts (P27), Scientific and Academic Texts (P35), Finance/Accounting Texts (P38).

P41 explained that eligibility of a text to MT depends on the type of the MT engine. He asserted that an MT engine customized for legal translation was used for legal translation, but it could also be experienced with medical and technical texts. P47 stressed that “I use MT in every job assignment. So, it can be used in all courses.” P51 also put forward that “MT output might be utilized in all portential translation classes.”



Graphic 12: Distribution of Eligible Courses for MT Use

Source: Created by the author via Google Forms questionnaire.

It is seen from the Graphic 12 that the participants think the most appropriate course to use MT is Technical Translation. Also, Medical Translation is seen as the second most appropriate to benefit from MT. This may be because these areas have specific terminology and similar patterns of language use. Other suggested courses such as “scientific text translation, academic text translation, finance/accounting translation, business translation” are also have identical features in terms of harboring specific terminology and similar patterns of language use.

Another question addressed to participants was **“Do you think machine translation should be taught in stand-alone courses or across the curriculum?”** And they were requested to briefly explain their reasons. P18, P39, and P47 gave irrelevant responses. P23 expressed he was not sure about which one was more effective. P36 was also unsure about it.

Seven participants (P11, P15, P29, P40, P43, P49, P50) asserted that MT should be taught in stand-alone courses. As can be seen from the excerpts below, P11 pointed out the knowledge of the translator trainers which may not be enough to teach MT. P29 explained that only if MT was taught in a stand-alone course, the students could learn the available tools more proficiently. P49 draw attention to the intellectual development of the students. With this regard, she thinks that the other courses can focus on improving their other capabilities.

P11: “It should be taught in stand-alone course. Every instructor may not be capable of teaching it.”

P29: “Yes it should be taught as a stand-alone course. Only in this way can students learn to use the available tools proficiently.”

P49: “Stand alone courses. The rest of the curriculum should be spared for improving students’ capabilities in various other tasks, fields. Intellectual development should also be given importance.”

Twenty three participants (P2, P3, P5, P7, P9, P13, P14, P19, P20, P21, P22, P24, P26, P31, P32, P33, P34, P35, P37, P38, P42, P44, P46) supported that MT should be taught across the curriculum

P19: “Across curriculum: Post-editing process will be the main part of the occupation in time, so lecturers should integrate machine translation and post editing in their courses.”

P22: “Across the curriculum, because it is a part of a greater set of skills for translators.”

P26: “across the curriculum adapted to each specialized translation course”

Fifteen participants (P1, P4, P6, P10, P12, P16, P17, P25, P27, P30, P41, P45, P48, P51, P52) suggested that MT should be taught first in stand-alone courses then extended to the curriculum:

P16: “Yes and no. Yes, because students should be able to learn different aspects of different mt technology in stand-alone courses but mt may also be used in other courses to complement the course. In other courses, course specific elements that need attention in mt may be tackled to deepen the MT knowledge”

P27: “Firstly, Stand-alone. Then, across the curriculum. The translation students should be taught translating process, the benefits and limitations of MT software firstly. They should be aware what they use and then they can have experience it more consciously.”

P41: “A stand-alone course should be available in the curriculum. Also, each individual course may offer related issues on MT.”

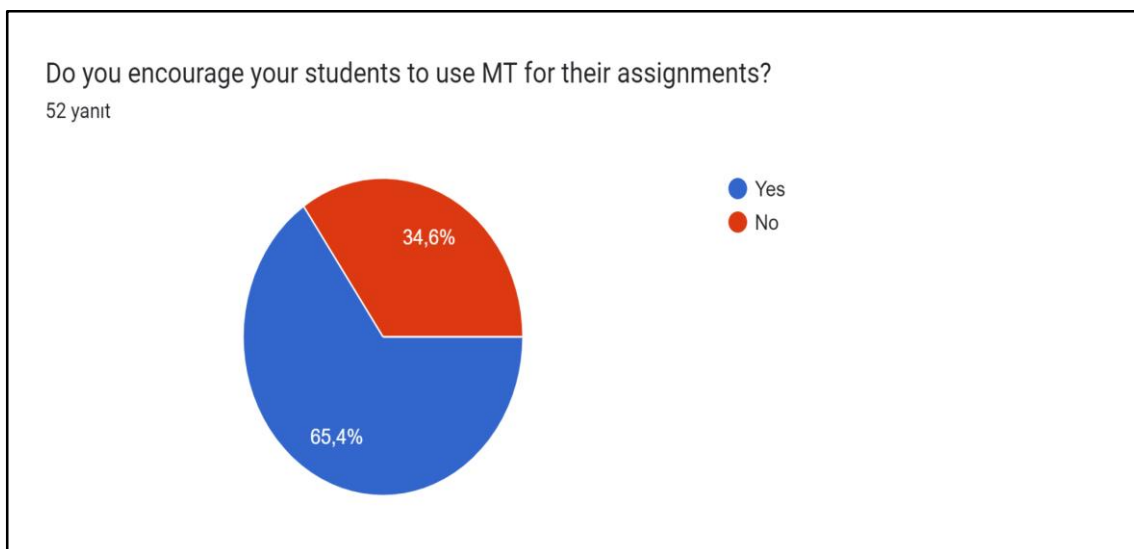
P44: “It should be taught in stand-alone courses so that students can fully understand their functions. Then they can be integrated into the curriculum of other courses.”

P8 explained that teaching MT in stand-alone courses or across the curriculum can be preferred. However, she emphasized that the courses should be taught by the translator trainers specialized on MT. Her emphasize is similar to that of P11 mentioned before.

P8: “Both ways can be preferred but the courses should be taught by the lecturer specialized on MT”

Responses of the participants to the teaching MT in stand-alone courses or across the curriculum laid out different opinions. Those who preferred stand-alone MT courses put forward that it is a specialized area and needs to be focused on thoroughly. Those who supported teaching MT in courses across the curriculum argued that it needs to be handled in different course to better understand its nature according to the relevant course. The third group’s argument is thought to be more suitable. Because it is true that MT is a specialized field and needs to be elaborated in a stand-alone course first. After learning the nature and use of MT, then students may practice it in other specialized courses. On the other hand, the proficiency of translator trainers needs to be considered while structuring a curriculum that will cover MT in different courses.

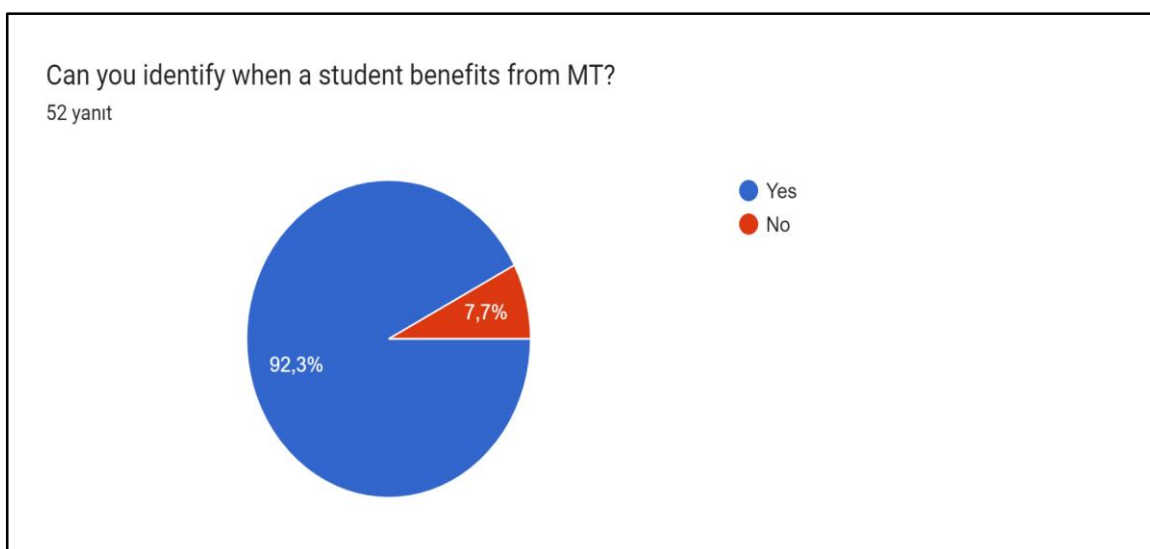
Graphic 13 shows the distribution of translator trainers encouraging their students to use MT. When **the participants were asked whether they encourage their students to use MT** for their assignments, 65.4% of the participants answered “Yes” while 34.6% of them answered “No”.



Graphic 13: Distribution of Translator Trainers Encouraging Students to Use MT

Source: Created by the author via Google Forms questionnaire.

This graphic may be interpreted as that the translator trainers know that students will be using MT in professional life. Therefore, they do not see much problem with students' use of MT for their assignments. Another point is that it is really hard to keep the students away from using MT. The translator trainers cannot control the use of MT as long as the students are willing to use MT. However as seen in Graphic 14, 92.7% of the trainers can identify when a student benefits from MT.



Graphic 14: Distribution of the Detection of Students' MT Use

Source: Created by the author via Google Forms questionnaire.

Graphic 14 shows that 68.8% of the trainers (33 participants) can **identify whether their students have made use of MT or not**. A follow-up question was asked to those who

answered the previous question as “Yes” to learn **how they could identify the MT use**. The answers given to this question clearly put forward that teaching experience is the main source of information for trainers to confirm students’ use of MT. As the trainers are aware of the linguistic proficiency of their students, they can easily know if a student with low English proficiency has used MT or not. Therefore, following the development of students’ proficiency proves to be an important indicator of identifying students’ use of MT when they are not allowed to do so. Three participants leveraged from plagiarism check for identifying MT use by students for their assignments. Two participants explained they could identify MT use through both plagiarism check and teaching experience.

Other methods put forward by the translator trainers to identify whether a student has benefitted from MT for their assignments are as follows:

P7: “It is identifiable by comparing one’s assignment to other students’ assignments.”

P13: “A teacher can predict what a student can and cannot, and some sorts of expressions sound typical of MT rather than a non-native speaker preference. So, it is possible to identify when students benefit MT.”

P19: “Improved language quality of some students who have trouble with language skills.”

P22: “Language use”

P35: “Both teaching assignments and similar assignments with similar problems”

P43: “As a lecturer you can easily recognize if a sentence belongs to the students and their texts. Sometimes text itself reveals that some part is generated by MT.”

P47: “Similarity of student translations”

P50: “MT has its own stylistic, if no post-editing is done, I can easily understand it as I also use it.”

These excerpts taken from the participants’ responses show that translator trainers mostly identify the student use of MT for their assignments by their own methods, however it is obvious that their methods are quite similar.

The participants were asked another question: “**Should translation students learn how to use MT effectively and perform post-editing?**” All 52 participants expressed that translation students should learn how to use MT effectively and perform post-editing. This is thought to be suggesting that the translator trainers know the necessity for

translation students to learn how to use MT and perform post-editing to be ready for their professional lives.

Another question was **“Do you use MT systems in your courses while teaching translation? If yes, for what purposes?”** Twenty-eight participants explained that they did not use MT in their courses while teaching translation. (P1, P2, P4, P6, P7, P8, P9, P10, P11, P12, P14, P17, P18, P19, P22, P24, P25, P28, P32, P33, P39, P40, P41, P44, P46, P48, P49, P51)

P3, P30, and P35 said they “sometimes” use MT in their courses. P35 gave an explanation for his answer which can be seen below.

P35: “I am not an expert of MT so I use them in very limited ways.”

Twenty participants asserted using MT in their classes for the purposes they have mentioned in the excerpts below. (P5, P13, P15, P16, P20, P23, P26, P27, P29, P31, P34, P36, P37, P38, P42, P43, P45, P47, P50, P52.)

P13: “Yes. I use MT systems for teaching translation technologies.”

P16: “I use it in CAT course to show the benefits of it and post-editing and show the interpreting performance in the first class of it.”

P21: “Yes. for pre-editing and post-editing, also it helps a lot in the translation of longer problematic sentences, it is a time-saver tool.”

The next question was **“Would you be willing to introduce MT in your translation courses? Please explain your reasons.”** Only the participants P17, P23, P26, P42, and P52 were not willing to introduce MT in their courses for reasons that they were not experts in MT, they did not teach practice-oriented courses, or they taught only interpreting courses.

Another question was **“What do you think about ethics and the MT use by students during their learning process?”** The participants generally did not see any problem in terms of using MT and ethical considerations. A few of them pointed out that if transparency is not provided and the instructor does not allow the use of MT, these situations might lead to academic dishonesty. Some of the arguments provided by two groups can be seen below.

P7: “For example, this issue is at least as problematic and ethical as using a washing machine. People use technological products today. They will also use MT, but this should not be hidden. What is ethical is not to hide that assistance was taken from the machine.”

P12: “If the instructor doesn't permit MT, it's a kind of plagiarism.”

P13: “I think the use of MT cannot be ignored today, and it should be taken into consideration for their learning process, as well. As long as they are aware that this is only a tool to help and support them, there will be no ethical issue.”

P21: “They should verify their answers. Otherwise, it (the mere usage of MT) won't be ethical.”

P32: “Using MT is not an unethical attitude. It is a legit professional tool. However, students should also be trained to translate or interpret with no MT at all or limited use of MT. Ethical issues arise if the student is completely dependent on MT and is not able to perform high quality translation tasks without it.”

As can be seen from the experts, many translator trainers do not see any ethical problem with students' use of MT on condition that they are honest about using MT and they use it only as an aid, which means they do the job themselves by post-editing the raw MT output.

Another question was **“Considering the role of human translators in the translation process, what do you think about the influence of MT use and the future of the translation profession?”** The following quotations taken from the responses of the participants summarizes the general views of the translator trainers towards the role of translators in the future.

P3: “Artificial intelligence and neural machine translation are developing extremely rapidly. In addition to rapid development, the quality of machine translation is increasing day by day. Moreover, when we consider artificial intelligence-supported interpreting systems such as SeamlessM4T, I think that machines will replace human translators in the near future.”

P13: “There will always be a need for a human element, but in the quality assessment of the translation process, that is, in post-editing processes. Because humans are one step ahead of machines with their ability to think in context and their ability to understand and comprehend.”

P21: “MT will be used by the public and by those who do not seek well-built texts and just need to get the gist of a text. But in professional settings where the target text is to be well written in which problems may cause financial losses, like international trading, or loss of an individual, like in medicine or law, human touch will be of essence and professional translators will still be at the center.”

P37: “I think human translators who can use MT productively are indispensable for the future.”

As can be interpreted from the excerpts, very few of the translator trainers think that MT will replace human translator. However, many of them assert that human translators will still be in the scene of translation industry on condition that they are highly qualified translators with MT knowledge. From these views, it is obvious that nobody denies the power of MT in the translation industry, and it will change the role of human translators to post-editors, yet not proficient enough to replace human translators.

Later, the participants responded the question **“How can translator trainers improve their technology acceptance regarding machine translation? Could you suggest some strategies that can promote the translator trainers' technology acceptance of MT?”** Again, first some excerpts from their responses are presented.

P6: “A training can be given to trainers either as face to or as online modules. This may increase their technology acceptance to some extent. The course should not only include theoretical considerations but also hands-on assignments.”

P13: “I do not think that translator trainers have issues about accepting the use of MT, they are also in this process and are aware of the current advancements. I think they can be only better equipped with the fast-developing technology, as well. If they are well-equipped and aware of the capacity of these tools, they will also teach and use them appropriately with their students.”

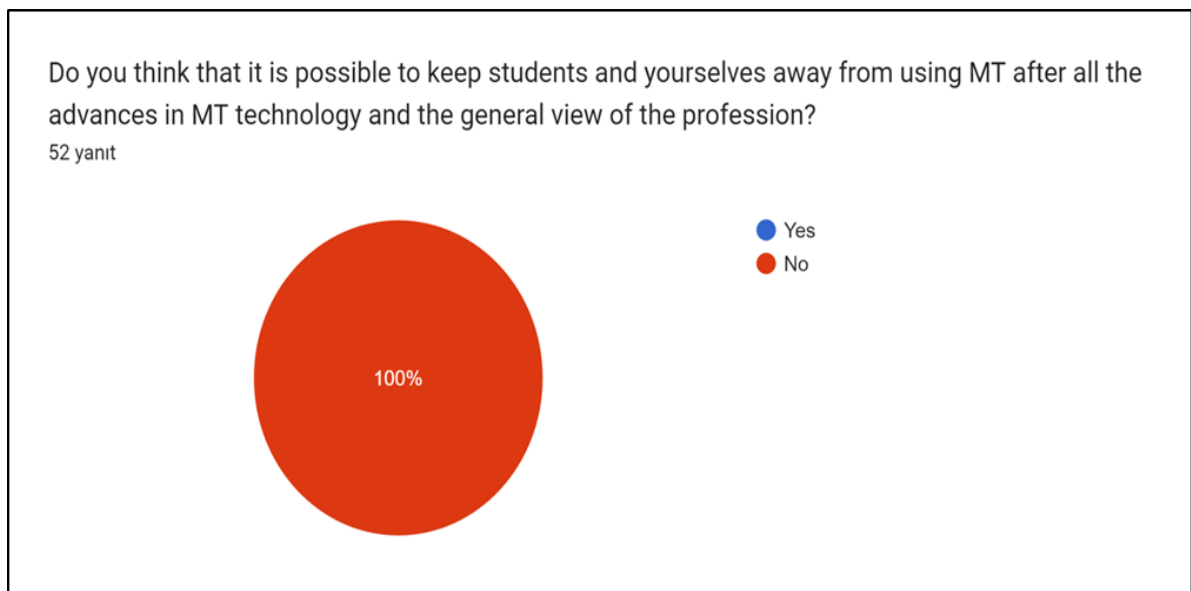
P21: “To help translator trainers accept machine translation (MT) technology, they can be educated on its benefits, given hands-on experience, and involved in collaborative workshops. Additionally, showcasing successful examples of MT in professional settings and offering ongoing professional development can encourage them to integrate MT into their teaching. Combining MT with traditional translation methods can also help trainers see it as a helpful tool rather than a replacement.”

P42: “Seminars and workshops on MT and CAT should be organized in the departments of Translation and Interpreting at all universities so that the academic staff can get used to using such digital systems in the translation process. Unless they use these platforms, they cannot effectively teach them.”

As asserted by the participants above, seminars, workshops, and in-service training should be organized to increase the translator trainers' technology acceptance of MT.

When they learn more about MT, then they can be more helpful in terms of teaching translation students this translation technology.

The last question of the questionnaire was **“Do you think that it is possible to keep student and yourselves away from using MT after all the advances in MT technology and the general view of the profession?”** As the Graphic 15 shows, all the trainers think that it is not possible to keep away from using MT. This may be due to the fact that MT has become an indispensable part of the daily life of even a layman let alone the professional translators. This may also be linked to the fact that MT engines have been served as free sources to the general public, thus people have been using these tools increasingly.



Graphic 15: Distribution of the Opinions About the Use of MT by Students and Translator Trainers

Source: Created by the author via Google Forms questionnaire.

The unanimous agreement among the participants hints at a point: MT is not inevitable. Therefore, MT should be learned and practiced both in educational and professional life. The students should be ready to use MT when they start their careers. Moreover, translator trainers also need to catch up with the advances in MT technology so that they can prepare their students better and more equipped for professional life.

CONCLUSION

Machine translation (MT) has made great strides. MT research started with high expectations, failed along the way, but did not stop working. Over the years, there have been many developments in MT. As a kind of translation technology, it has begun to change the way translators work. As a result, the expectations of professional translators' skills have changed along with the progress of MT studies. Considering the progress and spread of MT, MT knowledge is of great importance for a beginner translator as an instrumental competence. Therefore, translation students now need to acquire a new competence to use it effectively, as well as other competences, in order to produce high-quality translations. Much research has been done on the nature of MT, the quality of MT, the benefits and limitations of MT, but less attention has been paid to the perceptions of MT users. On the other hand, studies on the perceptions of MT users have mostly focused on the perceptions of language learners, translation students and professional translators, but the perceptions of translation educators have been overlooked. Although there have been a few studies on the perceptions of translator trainers in recent years, they have been limited in terms of their study group. Therefore, it was felt that there was a need to understand the perceptions of more translator trainers to get more idea.

Considering the fact that translation students are prepared for professional life by translator trainers, the views and attitudes of trainers towards MT are of great importance. With the aim contributing to the literature by trying to narrow down this gap, this study investigated the perceptions of the translator trainers on MT in Türkiye. Information about the significance and limitations of this study was elaborated at the beginning part of this study. Then, a brief introduction to the subject was made. In the first section, Literature Review, translation technologies, translation pedagogy, and the previous studies on the perceptions of language learners and translation stakeholders were explained with limited, yet important studies. The second section elaborated on the methodology of this study. The third section laid out the Findings and Discussion of the responses given to the questionnaire.

Methodologically, a self-administered online questionnaire was used to get the views of the translator trainers in Türkiye and their perceptions were tried to be revealed. The questionnaire covered multiple-choice and open-ended questions, and the responses were analyzed through descriptive statistics and thematic analysis. A total of 52 translator

trainers filled in the questionnaire over a period of approximately two weeks. Thirty-eight of the participants (73.1%) were female while the other 14 participants (26.9%) were male. 48.1% of the participants were between the ages of 35-41. 26.9% of them were between 25-34 and 21.2% were between 25-34. Only 3.8% of the participants were over 55. A half of the participants had more than 10 years of experience in translator training. And, 28.8% of them had 6-10 years of experience. 17.3% of them had 1 year to 5 years of experience while only a small percentage (3.8%) had less than a year of experience. The most common language pair taught by the participants was English and Turkish. From all 52 participants, 30 participants (57.7%) stated that they did not teach any course on CAT tools or MT. Four participants (7.7%) explained that they taught courses only on CAT tools. Two participants (3.8%) expressed that they taught courses only on MT. Eight participants (15.4%) exclaimed that they taught courses on both CAT tools and MT. And eight participants (15.4%) asserted that they taught CAT tools and MT in a single course. According to these percentages, more than half of the participants do not teach any course on CAT tools or MT.

MT Literacy

75% of the participants did not get any formal training while the other %25 expressed receiving some kind of formal training on MT. 39 participants (95.1%) who did not get any formal training expressed their willingness to get a formal training.

More than half of the participants expressed using MT both for assimilation and dissemination purposes in their daily lives. Some participants were not very aware of the difference between a CAT tool and an MT software. When the participants were asked whether they knew the working principles of MT; 61.5% of the participants answered “Yes”, 11.5% of them answered “No”, and the remaining 26.9% expressed they were “unsure” about their knowledge of the working principles of the MT.

When the translator trainers were asked in what grade MT should be taught to students, the answers varied although those who support sophomore year were close to half of the participants.

Technical Translation, followed by Medical Translation were explained by the participants as the most appropriate courses to use MT. Features of this kind of translations text such as specific terminology and similar patterns of language use might be the underlying reason for these preferences.

The answers for the benefits of MT were categorized into four themes. These themes are identified as efficiency, availability, quality, and facilitation. However, the quality was also highlighted as a limitation of MT by many participants. Terminology, cultural elements, nuances, and grammar are the most common points paid attention to during post-editing process.

Pedagogical Implications

82.7% of the participant supported the immediate use of MT in translation classes. This is of significance as MT needs to be used in translation classes and students should be prepared for professional life more equipped. Still, it is evident that some participants have reservations about the immediate integration of MT in translation classes though the real reasons for these hesitations are not known. While the majority of participants supports the use of MT by translation students, there are several key considerations that must be addressed before allowing students to do so. First, they must learn basic translation skills. Then, they can learn about MT and employ it. Students must be aware of the limitations of MT so as not to be misguided by the raw MT output or irrelevant answers. Students must learn MT to keep up with technological advances in the translation field and be ready for the demands of professional life.

While there are differing opinions on how best to incorporate MT into translator training, it is obvious that a structured approach, which balances specialized MT training with integrated learning across relevant disciplines, is required. This approach will equip students with the comprehensive skills and understanding they need to effectively respond to the evolving demands of the translation profession. 65.4% of the participants expressed encouraging their students to use MT. Moreover, 68.8% of the trainers (33 participants) can identify whether their students have made use of MT or not, teaching experience is the main source of information for trainers to confirm students' use of MT. All 52 participants agreed that translation students must learn to use MT effectively and perform post-editing. This clearly indicates that translator trainers recognize the importance of equipping translation students with the skills to utilize MT and perform post-editing, ensuring their readiness for professional life.

Out of the respondents, 28 stated that they do not incorporate MT into their teaching practices. On the other hand, 3 participants indicated that they occasionally integrate MT systems into their courses. 47 trainers expressed using MT in their classes in a limited

way. Only five participants were not willing to introduce MT in their courses for reasons that they were not experts in MT, they did not teach practice-oriented courses, or they taught only interpreting courses.

Participants were generally unconcerned about the ethical implications of using MT. However, few participants were clear that issues could arise if transparency was not provided and instructors did not explicitly permit the use of MT, potentially leading to instances of academic dishonesty.

Implications for the Future of the Profession

The vast majority of translator trainers do not believe that MT will replace human translators. However, many of them are adamant that human translators will continue playing a vital part in the translation industry, provided they are highly qualified and possess comprehensive knowledge of MT. These views make it clear that there is no doubt about the impact of MT on the translation industry. It will undoubtedly change the role of human translators mostly into post-editors.

The participants were unequivocal in their view that seminars, workshops, and in-service training are essential to enhance translator trainers' acceptance and understanding of MT technology. Trainers can more effectively teach translation students about MT by increasing their own knowledge of it.

The trainers are convinced that avoiding the use of MT is not an option. This perception is undoubtedly the result of MT becoming indispensable not only in professional translation but also in everyday life for the general public. The availability of MT engines for free has undoubtedly contributed to their widespread use among people, further reinforcing their integration into daily activities.

The unanimous agreement among the participants makes one thing clear: MT is not inevitable. MT must be learned and practiced in both educational and professional life. Students must be ready to use MT when they start their careers. Furthermore, translator trainers must keep pace with advances in MT technology to better prepare their students for professional life.

Some participants demonstrated a clear understanding of MT, indicating their ability to utilize it effectively in their classes. However, many of them were unsure of how to use it in their courses as they had not received any formal training on MT and were uncertain of their actual knowledge of it. They were willing to teach MT, yet lacked the detailed

knowledge required to do so effectively, including a grasp of its practical applications, limitations, and more. This situation demands training for the trainers before training the translation students. The constantly changing view of the translation industry demands that translation education reflect this change. It is essential that the trainers themselves receive training so that they can adequately prepare the students for professional life. Workshops and seminars must be held for translator trainers, and in-service training must be provided to the trainers. On the other hand, there is a clear need to investigate the integration of MT in the classroom to make good use of them and the ethics in MT use.

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APPENDICES

Appendix 1: Questionnaire of the Translator Trainers' Perceptions of Machine Translation

Dear participant,

We appreciate your participation in our survey which aims to explore and understand the perceptions of translator trainers regarding machine translation (MT). Your valuable insights will contribute to a deeper understanding of the evolving landscape of translation education in the context of technological advancements.

This survey seeks to gather your perspectives on various aspects of machine translation in the field of translator training. We aim to uncover insights into how translator trainers perceive the role of MT, the use and integration of MT tools in the training curriculum, and translator trainers' acceptance of MT.

Please take 20 minutes to respond to the following questions thoughtfully and honestly. Your responses will remain confidential, and the information gathered will be used solely for research purposes.

Your participation is crucial in shaping our understanding of the dynamic relationship between translator training and machine translation. By sharing your experiences and insights, you will contribute to the advancement of effective training methods in response to the evolving needs of the translation profession.

Thank you for your time and valuable contribution to this research endeavor.

Sincerely,

Zeynep Hıdır

MA Student at Sakarya University

Res. Assist. at Bandırma Onyedi Eylül University

Do you agree to participate in this study voluntarily?

- I agree
- I don't agree

Demographics

Gender

- Female
- Male

- Other

Your age

- 25-34
- 35-44
- 45-54
- 55+

Years of experience as a translator trainer

- Less than a year
- 1-5 years
- 6-10 years
- 10+ years

What is the language pair you teach translation?

Do you teach any courses specifically on CAT tools or machine translation?

- No
- Yes, only on CAT tools
- Yes, only on Machine Translation
- Yes, I teach both
- I teach them both in a single course

MT Literacy

1. Did you have any formal training on machine translation?

- Yes
- No

1.1. If you have answered the previous question as "Yes", please provide the source of training.

1.2. If you have answered the previous question as "No", would you be willing to receive training on machine translation?

- Yes
- No

2. Do you use machine translation in your daily life?

(**Assimilation** means using MT to translate a text with an MT software to only get the gist of the source text. And, **dissemination** refers to creating a translation that needs post-editing before published.)

- No
- Yes, only for assimilation purposes
- Yes, only for dissemination purposes
- Yes, both for assimilation and dissemination purposes

3. What machine translation software are you familiar with? Please name the software.

Please use ";" between the names of the software.

4. Do you know the working principles of MT?

- Yes
- No
- Unsure

5. If you know the working principles of MT, do you also know the differences between different types of MT i.e. RBMT, SMT, and NMT?

- Yes
- No
- Unsure

6. Do you have detailed knowledge about the benefits and limitations of MT? Could you please provide some detail?

7. What would you say regarding the quality of MT outputs?

8. Have you ever performed post-editing?

- Yes
- No

9. If you have ever performed post-editing, what can you say about the post-editing process (the challenges you faced, the things you had to pay special attention etc.)?

Translation Pedagogy and Current Practices

10. Do you think we should readily use machine translation systems in translation classes?

- Yes
- No
- Unsure

11. Should the students be permitted to use Machine Translation for their assignments? Why?

12. In what grade should Machine Translation be taught?

- Freshman
- Sophomore
- Junior
- Senior

13. Which courses are appropriate to make use of Machine Translation? You can choose more than one option and add other course names.

- Legal Translation
- Literary Translation
- Medical Translation
- Technical Translation
- Other:

14. Do you think machine translation should be taught in stand-alone courses or across the curriculum? Please briefly explain your reasons.

15. Do you encourage your students to use MT for their assignments?

- Yes
- No

16. Can you identify when a student uses MT for their assignments?

- Yes
- No

16.1. If you have answered the previous question as "Yes", how? You can choose more than one or add your own options.

- Plagiarism check
- Teaching experience

Other:

17. Should translation students learn how to use MT effectively and perform post-editing?

- Yes
- No

18. Do you use MT systems in your courses while teaching translation? If yes, for what purposes?

19. Would you be willing to introduce MT in your translation courses? Please explain your reasons.

20. What do you think about ethics and the MT use by students during their learning process?

Future Outlook

21. Considering the role of human translators in the translation process, what do you think about the influence of MT use and the future of the translation profession?

22. How can translator trainers improve their technology acceptance regarding machine translation? Could you suggest some strategies that can promote the translator trainers' technology acceptance of MT?

23. Do you think that it is possible to keep students and yourselves away from using MT after all the advances in MT technology and the general view of the profession?

- Yes
- No

Appendix 2: Ethics Committee Approval

Evrak Tarih ve Sayısı: 18.04.2024-E.354103



T.C.
SAKARYA ÜNİVERSİTESİ REKTÖRLÜĞÜ
Etik Kurulu



Sayı : E-61923333-050.99-354103

18.04.2024

Konu: 68/28 Zeynep HIDİR

Sayın Zeynep HIDİR

İlgi : 05.04.2024 tarihli ve E -050.99-0 sayılı yazınız.

Üniversitemiz Sosyal ve Beşeri Bilimler Etik Kurulunun 17.04.2024 tarihli ve 68 sayılı toplantısında alınan "28" nolu karar ile Zeynep HIDİR'in başvurusu **uygun** görülmüş ve karar örneği ekte sunulmuştur.

Bilgilerinizi rica ederim.

Prof. Dr. Selim İNANÇLI
Sosyal ve Beşeri Bilimler Etik Kurulu
Başkanı

Ek: Karar Yazısı (1 Sayfa)

Bu belge, güvenli elektronik imza ile imzalanmıştır.
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Adres: Esentepe Kampüsü 54187 Söğütözü SAKARYA / KEP Adresi: Bilgi için: Hanife Babacan
sakaryaimiversitesi@hs01.kep.tr Unvanı: Birim Evrak Sorumlusu
Telefon No: 0264 295 50 00 Faks No: 0264 295 50 31
e-Posta: ozelkalem@sakarya.edu.tr Elektronik Ağ: www.sakarya.edu.tr



KARAR

28. Zeynep HİDİR’in “ Translator Trainers’ Perceptions of Machine Translation (Çeviri Eğitimcilerinin Makine Çevirisine İlişkin Algıları) ” başlıklı çalışması görüşmeye açıldı.

Yapılan görüşmeler sonunda Zeynep HİDİR’in “ Translator Trainers’ Perceptions of Machine Translation (Çeviri Eğitimcilerinin Makine Çevirisine İlişkin Algıları) ” başlıklı çalışmasının Etik açıdan **uygun** olduğuna oy birliği ile karar verildi.

CURRICULUM VITAE

Full Name: Zeynep HIDIR	
Education Information	
Bachelor's Degree	
University	Boğaziçi University
Faculty	Faculty of Arts and Sciences
Department	Translation and Interpreting Studies
Publications	
1. Tokgöz, H., Altıntaş, H. S., Kul, M. N., & Hıdır, Z. (2022). Dilemmas in Machine Translation. (H. İ. Balkul, Ed.). Copy-Pasted vs Manually Typed Texts in Machine Translation (p. 1-76) Lambert Academic Publishing. ISBN:978-620-4-74330-1	