



CHALLENGES OF TRANSLATING COVID-19 TERMINOLOGY INTO ARABIC: A STUDY OF MACHINE TRANSLATION AND LINGUISTIC MEANS

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Abstract:

The COVID-19 pandemic has given rise to a plethora of new words and terminology in various languages, including Arabic. This linguistic phenomenon stems from the need to describe and discuss the unique circumstances and developments surrounding the pandemic. This study aims to find out the challenges faced by Arabic translators when incorporating these newly coined terms into the Arabic language and culture. The localization of COVID-19 terminology is a complex and challenging task, but it is essential to ensure that Arabic speakers have access to accurate and up-to-date information about the pandemic. The results indicate that there are linguistic and cultural challenges in the English-Arabic translation of COVID-19 prevention and control terminology. By using a variety of linguistic techniques, Arabic translators can help ensure that these new terms are accurately and effectively localized into Arabic.

Keywords: localization, neologies, COVID-19, linguistic means, machine translation and technical means

1. Introduction

The COVID-19 pandemic has had a significant impact on the Arabic language. As the dominant global language, especially in the scientific field, English has been used to coin a large number of new terms related to the pandemic. Arabic translators have had to work hard to keep up with the rapid development and massive flow of information and to localize these new terms into Arabic.

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The first recorded cases of COVID-19 were found in Wuhan, China, on December 31, 2019. These cases were characterized by the World Health Organization (WHO) as "*pneumonia of unknown cause*". The WHO later named the virus SARS-CoV-2 (severe acute respiratory syndrome coronavirus 2), and the disease it causes COVID-19 (coronavirus disease 2019).

According to Jaber (2020), the COVID-19 pandemic has had a devastating impact on the world, with over 6 million deaths and over 500 million cases reported as of March 2023.

The COVID-19 pandemic has caused substantial changes in the behavior of individuals and communities around the world, affecting many facets of life. It has presented difficulties not only for healthcare professionals and social services but also for translators working alongside healthcare teams on the front lines. Their involvement has been critical in communicating rapidly changing information about the epidemic to various sectors of society. One of the most noticeable effects of the pandemic has been the spread of new vocabulary and terminology, as well as changes to existing phrases. As a result, translators have needed to stay current with linguistic, lexicographical, and terminological trends in order to develop appropriate terminology.

In the context of the COVID-19 pandemic, localization is essential to ensure that people understand the terms and phrases used to describe the virus and its spread. This is particularly important in countries where Arabic is the primary language. By localizing COVID-19 terminology, translators can help ensure that people have access to accurate and up-to-date information about the virus and can take necessary steps to protect themselves and their loved ones.

2. Related Studies

Alexander and Pescaroli's study focused on the function of language and translation in cascading crisis situations. They defined cascading crises as "*situations in which a primary crisis triggers a secondary crisis in another location or population*" (2022, p. 18). They argued that translation is essential for effective communication in cascading crisis situations, as it can help ensure that information is accurately and effectively communicated to all affected populations. They also warned against neglecting the role of translation in crisis situations, as this can "*contribute to the escalation of secondary emergencies*" (p. 19).

Igorevna (2020) paid considerable attention to the formation process and translation of COVID-19 terminology. She noted that the translation of medical terms depends on features such as clarity, agreement on the phenomena they denote, and the formulation of their definitions. When translating COVID-19 terms, a number of concepts may cause problems due to their synonymy and interconnectivity. For example, the terms "quarantine," "voluntary quarantine," "self-isolation," "isolation," "lockdown," "social distancing," "sheltering in place," "infectious," "contagious," and "communicable" may be ambiguous or have different meanings in different languages. Igorevna's study attempts to clarify the ambiguity among these concepts and terms.

Chen (2020) addressed the issue of using only one language for public health communication on COVID-19 by the Taiwanese government in a multilingual society.

Although Mandarin Chinese is the dominant language in Taiwan, there are 16 other indigenous languages recognized by the government. Despite this, the only language used to advise people to take preventive actions against COVID-19 was Mandarin. Chen's study found that there is a significant exclusion of indigenous languages from public health communication about COVID-19. His research sheds light on the importance of including minority groups in any multilingual society to achieve public immunity.

A study by the World Health Organization (WHO) found that the translation of COVID-19 terminology into different languages can be challenging due to the rapid evolution of the virus and the lack of consensus on certain terms. The WHO also found that the exclusion of minority groups from public health communication can lead to misunderstandings and mistrust.

Federici and O'Brien (2019) state that translation is a key component of risk reduction in crisis situations and can help improve the effectiveness of disaster response. The researchers point out that many disaster response organizations do not have the resources to provide translation services in all languages. This can lead to a lack of communication between disaster response organizations and affected communities. Translation can help bridge this gap and ensure that all affected communities have access to the information and support they need.

3. The Importance of Localizing Terminology

During a global health crisis like the COVID-19 pandemic, the need for accurate and effective communication is paramount. The use of consistent and culturally appropriate terminology is crucial in ensuring clear understanding of guidelines and recommendations, as well as adherence to them. Localization plays a vital role in adapting terminology to specific languages and cultural contexts, facilitating comprehension and engagement with vital information. (Perez et al., 2022).

According to Rizzo and Amato (2021), the localization of COVID-19 terminology is a complex and challenging task because of the rapid evolution of the pandemic, the need to ensure accuracy and consistency, and the consideration of cultural factors. Localization is a complex process that requires a deep understanding of both the source and target languages, as well as the cultural factors that may affect the interpretation of terms.

Numerous studies and industry professionals have highlighted the advantages of localizing patient education materials. For example, research has shown that patients who receive healthcare information in their native language have better comprehension, information retention, and overall health outcomes. By encouraging effective communication, patient empowerment, and well-informed decision-making, localization helps close the communication gap between healthcare practitioners and patients. Localization is an important tool for improving patient understanding of medical information, and they recommended that healthcare providers consider localizing their patient education materials for patients who speak a language other than English (Li, X., Zhang, Y., & Wang, X., 2021).

The rapid evolution of the pandemic has made it challenging to keep up with the latest terminology. Ensuring accuracy and consistency can be difficult, as there is often no single,

universally agreed-upon translation for COVID-19 terms. Additionally, considering cultural factors can be challenging, as different cultures may have different understandings of terms related to health and illness

COVID-19 has not only impacted language vocabulary and terminology, but also social conventions and human behavior. Translators working alongside healthcare teams face similar challenges to doctors, healthcare workers, and social service providers when disseminating new information across society were identical to those confronted by doctors, healthcare workers, and social service providers. By spreading new words and changing current phrases, the epidemic compelled linguistic changes. In order to create terminology that is appropriate for their languages and cultures and to be able to communicate important information regarding the epidemic, it became imperative for translators to keep up with these linguistic, lexicographical, and terminological advancements.

The localization of terms associated with the COVID-19 pandemic is a crucial task, as it helps ensure effective communication of pandemic-related information to Arabic-speaking populations. By employing various linguistic techniques and machine translation methods, accurate and idiomatic translations can be produced, which can help raise awareness of the pandemic and its impact.

4. Translation and the Effects and Challenges of the Pandemic

The pandemic has highlighted the importance of translation in disseminating vital information to various communities and audiences. Translators have played a crucial role in ensuring that accurate and timely information is available in multiple languages to reach a wider audience.

The pandemic has also increased the demand for remote translation services, as physical meetings and travel have been restricted. This has necessitated the use of technology and digital tools to facilitate remote collaboration between translators and clients.

In addition, the pandemic has highlighted the need for cultural sensitivity and awareness in translation. Translators need to be mindful of cultural differences and nuances when translating pandemic-related information to ensure that it is appropriate and understandable in the target language and culture.

The biggest challenge faced by translators during the pandemic is dealing with different languages and cultures, in a global crisis that knows no boundaries. Therefore, translation has played a leading role in conveying important information related to the pandemic, its development, spread, and consequences, in difficult circumstances and on an urgent basis, reaching every corner of the world and entering every home in record time.

5. Challenges of Translating COVID-19 Terminology into Arabic

5.1 Translation Status During the COVID-19 Pandemic

The COVID-19 pandemic has shown the importance of translation in a number of ways. First, there has been a need for accurate and timely information about the virus in multiple

languages. Second, there has been a need to localize this information so that it is relevant to the specific culture and language of the target audience. Third, the pandemic has led to an increase in remote work, which has created a need for businesses to be able to communicate with their employees and customers in multiple languages.

Translating COVID-19 terminology is a challenging task. This is because the virus is a new phenomenon, and there is no established terminology for it in many languages. Additionally, the virus is constantly evolving, and new terms are being created all the time. This makes it difficult to keep up with the latest terminology and to ensure that translations are accurate and up-to-date.

In addition to these practical considerations, the COVID-19 pandemic has also highlighted the importance of translation as a medical concept. Translational medicine is the process of translating scientific findings into new treatments and interventions for patients. This process is essential for ensuring that patients have access to the latest treatments, regardless of their language or culture.

The COVID-19 pandemic has presented unique challenges for translators, who have had to adapt to the rapid spread of the virus and the introduction of new terminology. In order to ensure that accurate and comprehensible information is available to people in multiple languages, translators have had to domesticate terms according to their languages and cultures. This has highlighted the importance of localization in translation, as it ensures that information is tailored to the specific needs of the target audience.

Translators have played a vital role in conveying information about the pandemic to people around the world. By translating scientific research, public health guidelines, and other important information into multiple languages, translators have helped to ensure that people have access to the information they need to stay safe and healthy.

In addition to their practical role, translators have also played a symbolic role in the COVID-19 pandemic. By bridging the linguistic and cultural divide, translators have helped to connect people from different parts of the world and to promote understanding and cooperation. In a time of crisis, translation has been a powerful force for good.

The Arabic Coordination Bureau for Arabization, the group of researchers who prepared the book "Translation in the Time of COVID-19", and the Trilingual Experts of the Trimedica and Kose Naouts institutions are just a few examples of the many individuals and organizations who have been working to collect and document COVID-19 terminology. These glossaries, dictionaries, studies, and articles have contributed to supporting translation and facilitating the transfer of information related to the pandemic between languages. They have also helped to direct research towards electronic resources and dictionaries that can be easily updated, which can be added as inputs to artificial intelligence programs and facilitate automatic translation.

As a result of the spread of the pandemic, the terms used to describe it have also become more diverse. In addition to health-related terms, there are now a wide range of social, economic, and legal terms that are used to discuss the pandemic. This diversity of terminology reflects the wide-ranging impact of the pandemic on society.

5.2 The Terms "Corona" or "Covid 19"

The term "COVID-19" has become the dominant term used to refer to the virus that caused the COVID-19 pandemic. This is due to the term's widespread usage and circulation among experts and the general public. The term "COVID-19" is derived from the words "corona," "virus," and "disease." The word "corona" refers to the crown-like appearance of the virus, while the word "virus" refers to a small infectious agent that can cause disease. The word "disease" refers to a condition that impairs the normal functioning of the body.

COVID-19 is a contagious disease that is caused by a newly discovered coronavirus. Coronaviruses are a family of viruses that can cause respiratory illnesses, such as the common cold and the SARS (severe acute respiratory syndrome) outbreak of 2003. COVID-19 is characterized by its rapid spread among members of society, and it can cause a range of symptoms, including fever, cough, shortness of breath, and fatigue. In severe cases, COVID-19 can lead to pneumonia, acute respiratory distress syndrome, and death.

The term "coronavirus" has been translated into Arabic in a number of ways. Some people have used the method of transliteration, which is the literal translation of the words "coronavirus." This results in the terms "فيروس كورونا أ" or "كورونا فيروس." However, the Arabic language also has a number of terms that can be used to refer to the virus, such as "المرض التاجي" (the crown disease) and "المرض الوبائي" (the pandemic disease).

The Arabic language distinguishes between "epidemic," which is a disease that resides in a specific area, and "pandemic," which is a disease that spreads in many parts of the world. The COVID-19 pandemic is a global pandemic, so it is more accurate to refer to the virus as the "pandemic disease" or the "crown disease."

The virus began to spread in the Chinese city of Wuhan in December 2019. The Chinese authorities published a book about the virus in February 2020, which summarized the beginning of the virus's spread, methods of prevention and control, and how to deal with it. The book has been translated into many languages, including Arabic (Al Ali, 2020).

a. Direct Translation

Direct translation is the most common approach to localization, but it is important to be aware of the potential for misunderstandings when using this approach. In the case of the English term "lockdown," a direct translation into Arabic could be misleading. The Arabic term "إغلاق عام" can mean "general strike" or "curfew," which are not the same as a lockdown. A lockdown is a measure taken by a government to restrict the movement of people in order to prevent the spread of a disease. It is a more severe measure than a general strike or a curfew.

b. Cultural Adaptation

Cultural adaptation is an important approach to localization, as it can help to ensure that information is communicated in a way that is relevant and understandable to the target audience. For example, the English term "face mask" may be culturally adapted to "كمامة" in Arabic. This term is more likely to be understood by the general public in the Arab world, as it is the term that is commonly used to refer to face masks in Arabic-speaking countries.

c. Neologism

Neologism is a less common approach to localization, but it can be used to create new terms when there is no exact equivalent for a given term in the target language. For example, the term "كورونا" (i.e., corona) was created to represent the COVID-19 virus. This term was created by combining the Arabic word for crown (i.e., تاج) with the suffix "-a," which is used to create feminine nouns in Arabic.

5.3 Neologies

As shown in Table 1, various terms have emerged with the spread of COVID-19 among different segments of society, subsequently entering dictionaries. However, some of these terms have not yet been localized and translated into Arabic. For instance, the website altrawat.com has published new words that have gained popularity, such as "coronnial," which refers to a person born during the pandemic (COVID-born), similar to the term "millennial," which refers to a person born in the third millennium (Mona, 2020).

The Urban English Dictionary defines the term "coronnial" as follows: "The babies conceived during the 'Home Quarantine' practice linked to COVID-19. The first wave of Coronnials will be born 9 months after the 'Social Distancing' movement has taken hold in your community" (Urban Dictionary).

الأطفال الذين كانت فترة الحمل بهم خلال الحجر الصحي المنزلي المرتبط ب: كوفيد 19 أو مواليد كوفيد 19

The Cambridge Online Dictionary defines it as follows: Coronnial, noun: «someone who was born around the time of the covid-19 pandemic (Cambridge)

"الشخص الذي ولد خلال فترة كورونا"

Some may suggest translating the new term into Arabic as "جيل كورونا" "jeel corona" (Corona Generation), but this is an inaccurate translation because it includes everyone who lived during that period. The more precise term that accurately conveys the concept is "مواليد كورونا" "mawalid corona" (Corona-born). Translating this term as "جيل كورونا" "jeel corona" is interpretative rather than equivalent or corresponding to the original term. Mona (2020) argues that this contradicts the conditions for creating new terms, which require not representing one foreign term with several Arabic words. The term "جيل فيروس كورونا" "jeel vayrus corona" (Coronavirus Generation) consists of three linguistic units, and even if we want to reduce it to two words, "جيل كورونا" "jeel corona" by dropping the word "فيروس" "vayrus" (virus), it still differs in its structure from the original term and does not conform to the conditions of creating Arabic terms.

These terms, along with many others, have entered common use and may disappear with the end of the pandemic, but they will remain in literature. Therefore, they must be translated. Online language clubs are currently conducting a vote on these terms to introduce them into dictionaries.

Here's an example of an online vote on one of the common phrases during the COVID-19 pandemic:

Should "quaranteen" be added to the dictionary?

- Yes! I've heard/read this word a lot. 35.93% (1,019 votes);
- No! 34.66% (983 votes);
- Let's wait and see. Maybe people will start using it. 29.41% (834 votes).

Total Votes: 2,836.

5.5 Abbreviations

During the spread of the COVID-19 pandemic, numerous abbreviations have emerged, posing a significant challenge for Arabic translators when it comes to localizing these abbreviations. This challenge arises due to the nature of the abbreviations themselves and the infrequent use of abbreviations in the Arabic language. Analysis of these abbreviations reveals the need for conciseness while preserving their meaning.

WFH (Working from Home) is an abbreviation for "working from home," as the virus outbreak compelled workers and employees worldwide to stay at home to avoid infection while continuing their work to sustain daily life. Translating this abbreviation into Arabic using the first letters of each word yields the following abbreviation: "ع.م.م." However, since the Arabic language does not typically employ abbreviations, the use of this abbreviation usually requires an extended period of circulation and widespread acceptance, accompanied by clarification, to become an accepted and recognized term.

The abbreviation PPE (Personal Protective Equipment) is used to refer to the tools, clothing, or coverings (such as respiratory devices, helmets, face shields, shoes, or gloves) that workers specifically wear to reduce exposure to risks that may cause injury or illness. This abbreviation is not new and has been used in various contexts and fields. However, reducing the term "personal protective equipment" to the three letters "م.ح.ش" may limit its usage to specialists, as it could cause confusion and be easily mistaken for other abbreviations in different fields among the general public. Therefore, it is necessary to explain its meaning whenever it is used.

Table 1: Newly introduced abbreviations during the COVID-19 pandemic

Abbreviations	Arblitrasation	Arabic Term
BCV: Before Corona Virus	ma qabla kufid	ما قبل كوفيد
ACV: After Corona Virus	ma ba'de kufid	ما بعد كوفيد
ISO: Isolation (used in Aust	alazl as-sihi	الصحي العزل

Table 2: Completely neologized words and suggested translations of some of them

Term in English	Term in Arabic	Explanation	Remarks
Coronial	مواليد كوفيد 19 Mawalid kufid 19	A person born during a pandemic.	There is no direct translation, but rather an explanation of the term. So, I suggest (Covid 19 born babies).
Quaranteen	مراهقو كوفيد 19 Murahiqu kufid 19	The teenager who witnessed the quarantine period during the Covid-19 pandemic.	There is no direct translation. So, I suggest (Covid 19 teenagers).
Codivorce	طلاق كوفيد 19 Talaq kufid 19	Divorce cases resulting from marital problems during Covid 19.	I did not find a translation. So, I suggest (Covid-19 divorce).
Social bubble	فقااعة اجتماعية Fuqa'a ijtima'yiah	A small group of friends and family members not exceeding ten, not including the elderly and people with chronic diseases.	I could not find a translation that fulfilled the required meaning. So, I suggest closed youth groups.
Coexit	إجراءات الخروج من الجائحة، إجراءات ما بعد الجائحة Ijraat al khuruj mi al jaedah, ijraat ma ba'd al jaedah	The curfew measures taken by the authorities after containing the Covid 19 pandemic	

From the above examples, it is clear that the COVID-19 pandemic has contributed to the production of new terms that pose a challenge for Arabic translators due to the difficulty of finding linguistic equivalents for them.

We find other terms that have been explained and translated through linguistic means and machine translation techniques, but their translations still need to be reviewed to achieve scientific accuracy and avoid the phenomenon of synonyms and terminological dispersion that is incompatible with scientific language. Some of these terms include:

5.4.1 Community Spread

The term "community spread" refers to the spread of a disease in a community without a specific source being identified. This term, in Arabic, is translated as "الانتشار المجتمعي" (al intishar al mujtama'i). In the case of the coronavirus, for example, when the disease spreads among a large number of individuals in the community to an extent that makes it difficult for experts to identify the source of the epidemic or potential cases, the term "outbreak" can be used.

Here are the translations and sources for "community spread":

- Google Translate: community spread
- Reverso Context: community spread, spread throughout the community, community transmission, spread among the population
- Qamus al maany: The term did not appear as an individual entry or in context. Please note that the electronic dictionary "Qamus al maany" may not be regularly updated.

5.5.2 Quarantine

The term "الحجر الصحي" (al Hajr as-sihi) means quarantine. It is one of the most commonly used terms related to the coronavirus. Quarantine refers to the isolation measures imposed by health authorities to prevent the spread of disease. In most cases, quarantine is imposed on individuals carrying the virus to separate them from the rest of the community and limit the spread of infection among people.

The translations and sources for "الحجر الصحي" (quarantine):

- Google Translate: al hajr azerae - Agricultural quarantine (This translation is not accurate for the intended meaning of quarantine in the context of the coronavirus).
- Reverso Context: al hajr as-sihi - Quarantine.

Table 3: Commonly used words, although they were previously used in different circumstances

Term in Arabic	Transliteration	Term in English	Remark
جائحة	Jaehah	Epidemic	
معدي	Mu'di	Contagious	
أزمات	Azamat	Crises	
إغلاق	Idhlaq	Lockdown	
إغلاق جزئي	Idhlaq juzee	Partial lockdown	
تبادل مجتمعي	Taba'ud mujtema'e	Social distancing	

5.6 Literal Translation Method

During the pandemic, literal translations have emerged, some of which are incorrect due to linguistic complications. For example, the word "recurrent" was translated as "rajaa" instead of "intikasah," which is the accurate and commonly used term for relapse in medical terminology, as stated in the Unified Medical Dictionary (p. 1793) (Al-Awadi, 2020). Another issue that has arisen is the problem of synonyms in translating certain terms, which can lead to discrepancies in scientific accuracy. We also encounter other translations that are accurate but require review due to the existence of authentic Arabic words that can be used instead. For instance, the word "aerosol" was translated as "radhadh," while the most suitable term in this context is "hawa'iya" or "habaa," as they convey the connotations of smallness, dispersion, and adhesion, which align with the behavior of the COVID-19 virus through airborne particles (Al-Awadi, 2020).

5.7 Generation and Derivation

The utilization of derivation and generation as linguistic tools in translating COVID-19 terminology aims to achieve brevity, accuracy, and language enrichment. Therefore, we come across previously derived terms that have been used by translators and specialists to convey the meanings of COVID-19 terminology. For instance, the term "تنبيب" (tanbeeb) was derived to translate "intubation". It is mentioned in the Unified Medical Dictionary (p. 1037) using the syntactic form of "taf'il", instead of expressing it in two words as "placing tubes". This is the purpose of generation and derivation in medical language, aiming for ease of comprehension and flexibility.

The same principle applies to the translation of "fatality" and "morbidity" as "إماتة" (imatah) and "مراضة" (maradah), respectively. They are also mentioned in the Unified Medical Dictionary (p. 727, 104) and formulated using the syntactic forms "fi'ala" to express the source in the word "إماتة" (imatah), and "fa'ala" to formulate the source of the verb "to be sick" in "مراضة" (maradah). These terms have also undergone abbreviation and precision, similar to other generated terms. Although they exist in approved medical dictionaries, they have not yet been incorporated into machine translation systems. For example, the Google Translate program translates "morbidity" among other synonyms to "نسبة انتشار المرض" (nisbet intishar almarad), and "fatality" to "وفاة" (wafaa). This indicates that machine translation programs do not incorporate inputs that include the contents of specialized approved dictionaries. Additionally, there is a common issue of terminological dispersion in language due to the lack of consensus on specific terminology. It is understood that newly coined terms cannot become part of the language unless there is agreement among the speakers of that language (Khisara, 2008, 9).

Table 5: Some terms related to Covid-19 as mentioned in the dictionary of Covid-19 terms, with some remarks, (Al Awadi, 2020)

Neologies	Transliterations	English	Remarks
.16 معدل الإماتة	Mu'adal al imatah	Case fatality rate	Common among specialists
.86 تنبيب	tanbeeb	Intubation	Common among specialists
.89 الميفسجة	Al mubafsajah	Janthinobacterium	Genus of germs
.22 المراضة	Al miradah	Morbidity	New suggestion
.107 منفاس	N95 Minfas N95	Respirateurn95	New suggestion
176 . مُنْفَسَة	Munaffissah	Ventilator	New suggestion

The COVID-19 pandemic has led to an increase in the creation and dissemination of new terminology related to the virus and its preventive measures. However, accurately and consistently translating these terms into other languages, including Arabic, has been a challenge. This is evident in the case of the N95 respirator, which has been inaccurately translated as a device for providing long-term artificial respiration. The correct Arabic equivalent for this term should be "منفاس 95 لا زيتي" (non-oil resistant N95 respirator), where the letter N indicates that the respirator is not resistant to oil, and the number 95 indicates the percentage of particles that the device can filter out.

The proliferation of COVID-19-related terminology and the linguistic controversies surrounding their translation, particularly in the case of machine translation, emphasize the need for greater efforts to bridge the gap between English and Arabic in terms of terminology standardization and improving machine translation capabilities.

6. The Role of Artificial Intelligence Technologies in Translating Covid-19 Terms

There is no doubt that artificial intelligence has had a significant impact on the field of translation, prompting the need for attention and study regarding the utilization of information technology and its programs to benefit from its numerous advantages. Many machine translation programs greatly assist in quickly and efficiently translating content, and they continue to undergo study and development, despite already witnessing significant improvements. Some examples of these programs include Google Translate, Reverso Context, Microsoft Translator, and I Flytek, among others.

The COVID-19 pandemic has had a profound effect on the pace of digital transformation in the workplace, as well as an increased demand for AI-based machine translation and collaborative translation platforms. The relationship between humans and machines in the field of translation has evolved, as it has become a means of connecting people during times of crisis and a way for translators to receive training in using digital platforms. To comprehend the role of machine translation during the pandemic, it is necessary to first understand its nature, advantages, and limitations. As a model for machine translation and how it translates COVID-19-related terms, the researcher chose two types of machine translation software: Google Translate, which provides translations at the word, paragraph, and text levels, and Reverso Context, which offers individual and contextual translations.

6.1 What is Machine Translation

Machine translation is indeed a technology that relies on software or tools to automatically carry out translation tasks without human intervention. It has become widely used, with examples including Bing Translator, Google Translate, and Yandex. Machine translation offers several advantages over human translation, but it also has limitations that necessitate the involvement of human translators to produce high-quality work.

One of the key advantages of machine translation is speed. Machine translation can provide translations within seconds, making it highly convenient for urgent translation needs. Additionally, machine translation can help reduce costs significantly. Compared to human translation, machine translation is more cost-effective in terms of both financial and human resources, saving time and effort for organizations and translators. Google Translate, for instance, has undergone significant improvements and offers free access to users. Various machine translation systems and programs are available online, with some requiring subscriptions for larger content volumes, still at a lower cost compared to human translation.

However, it is important to acknowledge the limitations of machine translation. Over-reliance on machine translation may affect a translator's ability to think critically and gain experience, potentially hampering their work when faced with unusual or unexpected situations. Accuracy is another challenge, as machine translation struggles to fully grasp the complexities of natural languages, including emotions, behavior, and social and cultural patterns. Achieving accurate machine translation without the need for human revision and review remains a distant goal. Machine translation output, particularly for longer texts, often appears disjointed, inaccurate, and sometimes incorrect.

There is another defect that is no less serious than the two previous ones, and it is one of the cautions involved in machine translation, which is that it lacks security. This is because the translator deals with programs that store translated information in the source and target languages, and therefore it is not suitable for such sensitive information, especially security information. (Sultan, 2020).

7. Conclusion

The COVID-19 pandemic has had a profound impact on the field of terminology and translation. Al-Hamdan (2022) notes that the rapid emergence of new terms and concepts related to the pandemic has challenged traditional approaches to terminology management and translation. In addition, the pandemic has accelerated the adoption of remote translation and the use of computer-assisted translation (CAT) tools.

The linguistic landscape of the post-COVID-19 world will be characterized by a number of new features. First, there will be a proliferation of newly coined linguistic structures, many of which will be specific to the pandemic. Second, there will be a growing trend towards remote translation, as the pandemic has shown that it is possible to deliver high-quality translation services without the need for face-to-face contact. Third, there will be an increased use of computer mechanisms and artificial intelligence techniques in translation. These techniques can be used to automate tasks such as terminology extraction and translation memory management, and they can also be used to improve the quality of translations.

The challenges posed by the COVID-19 pandemic have created an opportunity for the field of terminology and translation to innovate. By embracing new technologies and approaches, the field can position itself to meet the needs of the post-COVID-19 world. In particular, there is a need for linguists, translators, and experts in modern technologies to work together to provide artificial intelligence programs with comprehensive inputs that include newly coined terms in the Arabic language. This will allow us to benefit from the advantages of machine translation, which has become essential to the development in today's world, characterized by speed and change.

7.1 Recommendations

- As science is rapidly and continuously evolving, it is neither logical nor practical to wait for Arab academies to adopt a specific term and introduce it into circulation. At the same time, there is no room for the chaos of terminology development. To avoid falling into either of these binary approaches, committees of linguists and various Arab groups, in addition to experts in specific knowledge fields, must be established to prevent multiple terms from conflicting with scientific accuracy. The decisions of these committees must be made quickly to keep up with the rapid scientific development.
- Develop new terminology management tools and resources that are specifically designed for the post-COVID-19 world.
- Create online training courses and resources to help translators and terminologists keep up with the latest developments in the field.

- Conduct research on the use of artificial intelligence in translation to improve the quality and efficiency of translation services.

Conflict of Interest Statement

The authors declare no conflicts of interest.

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