Machine Translation Practices In Education: A Pathway To Bridge Cultures For Sustainable Development

Priya Sharma*[1], Dr. Tanuja Yadav*[2]
[1]Department of Liberal Arts and Social Sciences, Manipal University Jaipur, Jaipur, Rajasthan, India – 303007, priaaasharma1712@gmail.com
[2]Associate Professor, Department of Liberal Arts and Social Sciences, Manipal University Jaipur, Jaipur, Rajasthan, India – 303007, tanuja.yadav@jaipur.manipal.edu

Abstract:
With the expansion of Globalization, people have started communicating in diverse languages, as well as in various fields, such as French media, French books, French news, and French films. As more people seek high-quality translations and affordable machine translations, the demand for machine translation is also increasing. The introduction of Artificial Intelligence, powered tools, has raised concerns about the cultural contextual quality of "machine translations". This research aims to analyze the impact of "machine translation" in French news, films, and blogs to increase cultural understanding and sustainable communication, as well as to explain why human intervention is imperative in the translation process to preserve the core message and cultural essence of the source text. It also looks at the need for sustainable "translation" practices that are socially and ecologically responsible, which can be achieved through AI. Incorporating machine translation in French media culture globally raises significant concerns, which this research tries to address. It aims to broaden practical and ethical uses of AI to strengthen sustainable translation practices concerning French media culture in the Global context. With an emphasis on continuously improving translation technology and methods, the paper finishes with suggestions for how media producers, translators, and lawmakers might use MT to foster long-term cultural interchange.
Keywords: *Globalization, Machine Translation (MT), Artificial Intelligence (AI), Sustainable communication, Translators, Cultural Interchange.*

INTRODUCTION:

Translation significantly contributes to the media by promoting information and communication between different languages and cultures. This enables content creators to target additional audiences, improving international engagement and understanding. The integration of technologies enables the preservation of the meaning of messages in translation for different cultures, thus facilitating communication and inclusion across borders. With respect to a mass communication system, the free flow across frontiers of information and content captures the interest of the public because of the ease of translation. Today, more and more countries participating in international trade are not only crossing language frontiers, but also crossing the borders of the culture of the people for whom they translate and localize. Media in the broadest sense work to obtain diverse and multiple audiences across cultures, enabling a diverse public to interact. It is not simply a case of putting the various parts of the text into different languages, and many translators will end the work here. Weapons of different languages are still evolving thanks to new technologies and new models like Google Translate, Microsoft, and DeepL Translate. They bring the unbelievable mastery of machine learning and DeepL to translate machine and speech, and begin to run and convert different languages. (Zaki, 2023) It is also necessary to reorganize the fabric of the tale in such a manner that the story can travel in the world. It is also necessary to reorder the fabric of the tale in such a manner that the story can travel in the world without contravening the message that the story began with. Long-form and short-form, news reports, stories, films and TV shows, plays, and simply anything on the internet, without a doubt, need translation, but work on the cultural and mental semantics. This is because the audience is cross-cultural, which the media decision makers need to think about in the case of the international extension of the business. In this approach, translation is considered as an ordinary practice as well as an elaborate means of connecting the source text and the target text for better integration within the media culture. The use of artificial intelligence (AI) technology in translation practices is, without any doubt, a tremendous achievement in the field of the translation of languages. The initial phases of development started with rule-based and statistical MT (machine translation), but the industry rapidly transitioned to neural MT, which uses deep learning to provide more relevant and contextual translations (O'Hagan, 2021). Today, the automation of translation tasks has become a commonplace practice thanks to AI integration, and machines have made the process efficient while

reducing costs for users and clients alike. AI has drastically changed the role of human translators in most firms – a person will now only edit and enhance documents that have been translated to a base human target language, achieving a fusion model of AI and human translation. From social norms and ethical concerns to the very morality of translating a text with the use of AI tools, these are the very points raised by Kenny (2020) and the &manhour; and firm savings gained in a translation task, das much of the interest. It is sociologically transformative AI in translation practice, is the first to ever cross the fundamentally primitive obstacles of Time, Space, and Language- TSL. Along with the increasing attention to linguistic biases and the endangerment of languages, there is a growing attention to content generation in multiple languages. No country today is as isolated as someone might think. Every nation in the contemporary world is interconnected less in relative geographical space than in the world of yesteryears and more than ever. The world-class technology shifts wedded to shifts in education seamlessly integrate today's world ecosystem. Indeed, the world is more interconnected than ever before. communication, therefore, is the lifeblood of machine translation. This research tries to examine the role of machine translation in promoting education in order to foster deeper interdisciplinary and international dialogues on sustainable development. Machine translation systems have significance. Recent models of machine translation systems have been replaced by neural machine translation systems. They are accessible and easy to use, which is an advantage for educational and instructional practices. The positive impacts of MT systems on artificial intelligence technology. Neural machine translation systems have a striking influence on the learning environment of languages. Understanding and acquiring the spoken language is crossed with shifts in the education system, culture, global citizenship, and current transformations. With respect to the quality of education and the SDGs (Sustainable Development Goals), the literature connects the application of the Multilingualism Theory (MT) to multicultural education and its cross integration. This case study explores the machine translation focus and its use in promoting sustainable development and equity through cultural exchange and understanding.

The Role of AI in Translation:

"AI certainly enhances precision and speed and removes barriers to access, thus transforming the field of translation services" (Koehn, 2020). The capability of AI neural machine translators extends far beyond the progress achieved. AI can, in mere seconds, translate and even interpret huge content in multiple languages through neural machine translation and advanced algorithms. More remarkably, the system can dissect a complex array of data and translate it almost instantaneously. AI can even assist human translators by contextualizing, thus enhancing the standard of translation that human achieves. In addition, it facilitates a smooth exchange of information across the globe in diverse fields such as e-commerce, medicine, and tourism, which is vital for the exchange of important information. The evolution of AI lends itself to better performance in translation, which increases the quality and speed of translations. This, in turn, enhances communication in society. Over the years, the developments in AI translation tools have received a few notable features that enhance user interaction and the quality of translation. One such development is the utilization of deep learning neural networks and artificial neural network algorithms, which allow machine translation to perform better with context than the older statistical methods. To summarize, context dramatically enhances translation quality, especially with idioms and complex statement structures. People are now able to use voice recognition and translation tools without facing translation complications on their journey or in a meeting, or event due to advanced technology. Other auxiliary tools, like glossaries along with customizable dictionaries, assure continuity and word consistency in fields like medicine and law, which are crucial in a translation. The cooperative features improve for translation services organization and work culture collaboration, while the users' comments on the tools assist in comment refinement. The overall efficiency and effectiveness of translation services served to individuals, organizations, and businesses would improve due to the reasons above.

Mechanisms of AI in translation:

The rise of technology in Natural Language Processing has opened up new branches in linguistic studies. In the field of AI, the intricate connections of the mappings with machine language have attracted a lot of attention, both academically and commercially, and as such, substantial progress has been made. In this regard, few technologies have emerged that are as prominent as Neural Machine Translation (NMT), which has grown seemingly exponentially since 2016, driven by the large amount of interest in the transformative capabilities it offers. In a contextual approach, the NMT process has been reduced to a set of intermediate outputs: a full sentence, multilingual representations, and cluster gram phrases. Unlike a

classical translational string, which begins with a single word, NMT is a non-centric, polycentric, and geographically bounded to a sentence in such a way that the meaning, the grammar, and the contextual essence of every single phrase can be evaluated and mapped, thus producing more natural and coherent outputs.

Most NMT systems are trained on large bilingual corpora in order to learn the interrelations regardless of the span or the base dialect. NMT models have been shown to benefit more from custom baseline reinforcement learning applications. In integrated systems, thanks to the attention-based algorithms of the translation net, translation solution bugs are minimized and vanish altogether. All those contribute toward the engineering of elaborate systems and skillfully and almost effortlessly maintain the usability and relationship training. As an illustration, the world has all but reshaped because of the progress made from artificial intelligence and has made life in multilingual societies manageable, which demonstrates the feasibility of transcending different language boundaries (Bahdanau et al, 2016). Advances in artificial intelligence have always been in parallel with the advancement of machine translation. This makes it possible for the machines to literally read and talk in any language that a person understands. These systems do improve the context anchoring, so the relevant context holding, the semantics, and syntax of the targeted comment in the discourse do get improved. It also employs crucial NP techniques like tokenization, part-of-speech tagging, and named entity recognition to break down and analyze the syntax and semantics of the utterances. The features of sentiment analysis and contextual embeddings have been instrumental in improving translation quality for metaphors and tonal shifts. This is also true for the intricate relationship between a language and the sociocultural context, which is why NLP translation captures that context.

Along with the anticipated advancements in NLP, there will surely be improvements in the quality of translations, and there will be innovations such as the avatars being able to converse with the user, self-learn, and discursively engage in free-flowing conversations.

Examples of AI applications in French media:

Both Narendra Modi and Emmanuel Macron share about how there are new opportunities for discussing interaction in space, energy, and Artificial intelligence while addressing and replying to one another. The posts are written and translated in real-time through Artificial Intelligence, and even the posts written in different languages are accessible. These posts bridge and promote the use of language Artificial Intelligence in international relations. Given the social platforms where Artificial Intelligence is performing translation, it is apparent how different people, speaking different languages, are privy to the important discussions and conclusions made through these pivotal exchanges, and this is a clear testament to how communications, driven through international AI, have progressed.

The tools that provide automated translations, using Artificial Intelligence, have changed the dynamic of e-commerce, allowing companies to cloak their content to suit local markets. Companies such as Amazon and Alibaba utilize AI technologies to convert product descriptions, reviews, and even customer assistance documents into different languages, fostering accessibility and improving customer experience. (Babazade, 2024).

This picture depicts Emmanuel Macron posted on X about his meeting with Prime Minister Narendra Modi at G7, where they discussed the issue of partnership in the fields of energy, defense, research, and culture.

Sustainable Translation Practices:

Rationality conducting translation activities in a socially reasonable, environmentally friendly, and economically viable manner refers to translation sustainability as an articulated framework concerning social sustainability, ecological sustainability, and economic sustainability. It constitutes an approach to performing translation activities integrated with sustainable practices to avoid damaging the environment, advancing social equity, and economically sustaining translation activities, eschewing the software industry's excesses, equitable remuneration for culturally sustaining, both inclusive and engaged translation, and active participation in global digital networks, environmentally responsible technology, and resource use. On the other hand, the primary focus of sustainability in translation is the reduction of global warming potential while maintaining an ecological balance, as well as the preservation of endangered languages and translatable civilizational languages. It widens the scope of ethical practices for translation professionals in the industry. Besides, the swiftly changing nature of technology relating to machine translations poses progressive boundaries in ethics around fidelity, as robots are more likely to miss the intricate context a human translator would understand. (Kimera et al., 2024). Sustainability in translation involves the interaction of an ecosystem, society, and the economy. Environmentally, saving and conserving resources through stopping or minimizing paper usage, recycling, and leveraging software programs that decrease the consumption of electricity is invaluable. Socially, there is a cultural need to offer a wider and more diverse range of translations in an effort to counter the dominance of a translation or translations that adversely affect a community. The economy is dual or multifaceted; that is, it advocates the payment of decent and fair fees to translators, the employment of local LSPs for the economic stimulation of an area, and the improvement of the region's translation. It also covers the quality and professional development aspects for the improvement of translation. While increasing productivity through the use of cloud technologies is a possibility, the environmental consequences have to be taken into account as well. The ethical and professional conduct of the outsourcer, which is the communicator on behalf of the client, is very important because there is a need to build trust. It is these, and perhaps a few more, which I believe would help relocate the translation industry to do more and be more for the world's sustainable growth.

Contribution of AI sustainability:

Enhancing translation sustainability is achieved through AI integration by streamlining techniques and minimizing resource use. Processes of work are enhanced by machine translation and AI, which also drives down waste and paper consumption. Faster translation completion represents another efficiency achievement, which in turn lowers the energy required for endlessly extended processes. Furthermore, AI in the conventional processes can anthropomorphize the role of diplomacy, providing rationalized systems for staffing them with translators.

AI actively contributes to the enhancement of sustainability in several ways.

1. **Finding and saving time and resources:** AI tools and technologies increase benefits in any industry as they lower the costs of business operations. For example, in the area of manufacturing, operations can be automated and thereby control the production waste and energy consumption to avoid excess production waste. In the area of logistics, AI has automated and optimally routed systems to customers' locations, which saves fuel and reduces time in delivery. Also, AI systems can avoid equipment breakdown and thus reduce idle time and waste resources, keeping costs of work to a minimum.

2. **The Proven Impact of AI Translation Tools on Reducing Carbon Emission:** From reviewing the post translated by the AI, it is evident that carbon emissions used in the translating process are proven to be less than compared of manual translation. Similarly, the post states that the AI can monitor and then minimize the Data Centers' carbon footprints by controlling the carbon emissions concentrated at the Data Centers when they house and operate these translation services.

3. **Energy Management:** monitoring and optimization are done in real-time; it is an AI technology that helps save a lot. Take, for instance, self learning, energy algorithm, computer works, knowledge capturing within a business, and helps reduce its use by over 15%. This has been observed that there is a reduction in operational costs and CO2 emissions due to energy generation.

4. **Waste Reduction:** Collectives can achieve significant waste minimization and reduction in manpower due to the ease of automating these tasks with the help of machine learning and artificial

intelligence (AI). For instance, to post-waste management, image recognition and classification systems can help with the proper sorting of waste through trained cameras and post-processed with Neural Networks (Nets). The sophisticated nature of AI can help realign processes associated with recycling and post-consumption to achieve optimal resource reclamation to minimize landfill diversion.

Examples of sustainable practices in French media:

It should be noted that, for the most part, the French media are starting to go green and implement sustainable practices. In particular, a number of outlets focus on the eco-efficiency of the processes, for instance, the production of paper using sustainable, recyclable, and eco-friendly materials such as sustainable papers and green inks. Furthermore, the media enhances narratives that foster climate action and green advocacy by promoting local green initiatives, sustainable tourism, and eco-friendly lifestyles. Furthermore, French media companies have partnered with environmental NGOs for outreach and other complementary advocacy on these messages. Projects like The Great Big Green Week, for instance, provide a case of how international communications can serve to promote certain initiatives, in this case, sustainable media practices. The French media, by integrating content and processes on sustainability, can position itself as a thought leader in the ecological transition, and as such, is the most advanced in its class.

Several eco-friendly policies are taking root in France's media landscape:

1. Le Monde's AI-driven translations: "AI-driven translations," a project initiated by Le Monde, attempts to increase productivity in translation while substantially minimizing resource usage by integrating AI in the translation process.

2. French film studios: Many of them employ artificial intelligence technology for determining global film distribution strategies. Such organizations are able to concentrate on precision with regard to market trends and audience preferences with the use of AI algorithms. This allows processing film distribution with the best efficiency and results.

3. Educational platforms: Several French platforms are using AI to produce content in multiple languages. By reducing the need for several copies of the same information, this method not only makes the content more accessible to varied audiences but also promotes diversity in education while preserving resources.

CONCLUSION:

In conclusion, the focus of the paper was on machine translation (MT) related to French media, news, and film. The world is a Global Village now, and more and more focus will need to be given to translation, which is contextually and culturally appropriate. The speed and quality of translation have hugely improved due to AI translation tools, in particular neural MT systems, but it is important to highlight that these systems do not solve every single translation problem. The translation problems involving deep understanding of culture and languages will need and require the assistance of a human for audiences to truly comprehend and relate to the message. Moreover, the study of translation practices that are ecologically sustainable suggests that in the realm of AI technologies, there is a potential to develop and put into practice processes that are ecologically and socially sustainable. By ensuring that translation practices are socially equitable and "green", the foundation for a more equitable and sustainable world can be established. The examples extracted from the French media show that the process has already begun, that the industry is actively changing, and that the progress is powered by AI, at least to some degree. As developments occur, media developers, translators, and policy makers must work together to prevent machines from mistaking translation technologies for their proper uses. This, we may, foster an intercultural environment and appreciate the magnificence of various languages. Therefore, AI translation technologies, alongside sustainable practices of human translators, AI-powered translation, and the human translator, serve to strengthen international relations and cross-cultural understanding. This paper also examined the practices of machine translation within the educational scope as a cultural bridging technology. The adoption of E-learning tools enhances the transient educational opportunities for multilingual students and contributes to the low-tier international exchange of ideas and information. The findings suggest the use of machines with educational systems for understanding human factors engineering, or ergonomics, and culturally aware technology. The increasing global interdependence will be fostered by the use of machine translation in international education to promote the diversity, equity, and inclusion of the cross-border proliferation of the UN Sustainable Development Goals. Further work

should be aimed at developing such technologies and studying their implications for equity of access and increased access to knowledge of other societies for fostering global understanding and peace.

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