

TECHNOLOGICAL ADVANCEMENTS IN SIGN INTERPRETING

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Abstract. *Technological advancements have significantly transformed the field of sign interpreting, broadening access to communication for deaf and hard-of-hearing individuals while reshaping professional interpreting practices. This thesis explores the evolution, impact, and future potential of technology in sign interpreting, focusing on innovations such as video remote interpreting (VRI), automatic sign recognition systems, sign-to-text and text-to-sign translation software, and virtual training environments. It examines how digital tools enhance accessibility in education, healthcare, and public services, while also addressing the ethical, technical, and sociocultural challenges that accompany their implementation.*

Keywords: *sign interpreting, technology, video remote interpreting (VRI), artificial intelligence, accessibility, deaf communication, sign language recognition, interpreter training, digital inclusion, assistive technology.*

The research highlights the dual nature of technology as both an enabler and a disruptor - improving efficiency and reach, yet raising concerns about accuracy, confidentiality, and interpreter displacement. By combining perspectives from linguistics, computer science, and accessibility studies, the thesis argues that technology should complement, not replace, human interpreters, preserving the cultural and emotional dimensions of sign language communication. Ultimately, it concludes that sustainable progress in sign interpreting depends on integrating technological innovation with professional training, ethical standards, and inclusive policy development.

Video Remote Interpreting (VRI) allows interpreters to provide services

remotely through video conferencing platforms. It is widely used in healthcare, education, and emergency services. While convenient, it requires stable internet and high-quality visuals to ensure accuracy in sign recognition and expression.

Recent advances in artificial intelligence have enabled experimental “sign-to-text” and “text-to-sign” systems. These technologies use motion sensors and computer vision to capture sign movements. However, current systems still struggle with the complexity of sign languages, especially non-manual signals like facial expressions.

Online interpreting programs and virtual reality simulations have emerged as effective tools for interpreter training. These platforms allow students to practice real-life scenarios in safe and controlled environments, enhancing both skill and confidence.

Educational interpreters play a vital role in enabling deaf students to access mainstream education. They interpret classroom lectures, discussions, and extracurricular activities. However, challenges include maintaining educational equivalence, managing multiple communication modes, and balancing the interpreter’s presence without overstepping the teacher’s role.

In legal settings, accuracy and impartiality are paramount. Misinterpretation can affect justice outcomes. Similarly, in medical interpreting, clarity can directly impact patient safety. These high-stakes environments require interpreters with specialized training in technical terminology and ethical decision-making.

Television broadcasts, conferences, and political speeches increasingly include sign language interpreters. Public visibility of interpreters enhances social awareness and promotes inclusivity. However, interpreters in media must manage timing, camera angles, and performance pressure.

Sign languages reflect the unique culture of the deaf community, often referred to as “Deaf culture” (with a capital “D”). This culture emphasizes visual communication, collective identity, and shared experiences of marginalization. Interpreters act as “cultural mediators”, not just linguistic translators.

Understanding Deaf culture helps interpreters avoid patronizing attitudes

and fosters respect for deaf autonomy. Cultural competence ensures that interpretation reflects community values and that deaf individuals are empowered to express themselves authentically.

Effective interpreter education combines linguistic proficiency, practical experience, and ethical grounding. Training programs typically include coursework in:

- Sign linguistics and sociolinguistics
- Interpreting theory and practice
- Deaf culture and history
- Ethics and professional standards
- Field internships

Certification systems vary by country but often involve written exams, performance tests, and continuing education requirements. Collaboration with deaf mentors during training is crucial for developing natural fluency and cultural understanding.

The future of sign interpreting lies at the intersection of technology, policy, and education. Governments are increasingly recognizing sign languages as official languages, as seen in the “United Nations Convention on the Rights of Persons with Disabilities (CRPD)”, which mandates equal access to communication.

Technological innovation will likely expand remote interpreting and automated tools, but human interpreters will remain irreplaceable due to the emotional, cultural, and contextual nuances of language. Continued advocacy, research, and training will ensure that sign interpreting evolves to meet the needs of both deaf and hearing societies.

As the conclusion we should point that the sign interpreting is a cornerstone of communication accessibility and social inclusion. It transforms linguistic and cultural boundaries into opportunities for understanding and equality. The profession requires not only technical skills but also empathy, ethics, and cultural awareness.

As societies move toward inclusivity, the role of sign interpreters will

continue to expand. Investment in interpreter education, fair compensation, and public awareness is essential to sustaining the quality and dignity of this profession. Recognizing sign interpreting as both a linguistic and humanitarian service reinforces the principle that communication is a universal human right.

LITERATURE

1. Stokoe, W.. Sign Language Structure: An Outline of the Visual Communication Systems of the American Deaf. 1960.
2. Roy, C. Interpreting as a Discourse Process. Oxford University Press. 2000.
3. Napier, J., McKee, R., & Goswell, D.. Sign Language Interpreting: Theory and Practice in Australia and New Zealand. 2016
4. Kasimova, A. N. (2023). Must-know skills to translate newspaper articles. SCIENTIFIC BULLETIN OF NAMANGAN STATE UNIVERSITY, (3), 281-287.
5. Қўлдошов, Ў. Ў. (2022). БАДИИЙ ТАРЖИМАНИНГ ЛИНГВОМАДАНИЙ ЖИҲАТЛАРИ ТАҲЛИЛИ. Academic research in educational sciences, 3(1), 670-678.
6. Faxriddin, B. J. (2023). The concept of “Subtitles” and their working in the text. Golden Brain, 1(15), 215-219.