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TECHNOLOGICAL ADVANCEMENT AND AI USAGE ON INTERPRETING TEACHING: A LECTURER'S PERSPECTIVES

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Abstract
Advancements in interpreting technology have significantly enhanced cross-language communication. This study examines how interpreting lecturers introducing their students to utilize these technologies in the classroom. It also explores the lecturers' personal perspectives on AI and interpreting tools. Using a qualitative approach, this study involved purposive sampling of two interpreting instructors who are also professional interpreters. The data for this study collected by conducting open ended interviews, followed by observing the method used to introduce the interpreting tools and how the sample's students perceive it. The findings indicate that interpreting tools are currently introduced merely as supporting aids and its usage are not yet fully integrated into the curriculum. The lecturers also believe that AI and interpreting tools are not yet be able to replace the needs of human interpreter. They also support for the measured introduction of these tools to students, considering ethical implications, optimal usage, and avoiding counterproductive practices in student learning.
Keywords: Interpreting teaching, Technological advancement, Artificial Intelligence, Perspective.

INTRODUCTION

In the ever-evolving digital era, fundamental changes on interpreting education are occurring in the way we learn and teach. Technology has become an integral part both for the classroom and interpreting practice. One of the most significant breakthroughs in the context of digital education is the use of Artificial Intelligence (AI) (Pelenkahu et al., 2023). AI is a field of technology that allows computers to learn, think, and act like humans. In the educational context, AI has opened the door to new possibilities that can change the way we manage and experience learning (Rodrigues et al., 2023).

AI is increasingly being deployed in recent years because it has strategic value in education. In line with this, Klamma et al., (2020) suggest that AI can be an effective learning tool that reduces the burden on teachers in teaching and offers an effective learning experience for students. Coupled with current educational reforms such as digitalization of educational resources, gamification, and personalized learning experiences, there are many opportunities for the development of AI applications in teaching (Muhie et al., 2023).

From the educator's perspective, AI has some revolutionary potentials that can change the learning paradigm. This has the potential to increase learning effectiveness by minimizing errors that often occur in traditional teaching. Not only that, AI is also able to increase teaching efficiency by automating time-consuming administrative tasks, allowing educators to focus more on direct interactions with students. This can also help in the development of a more dynamic curriculum, with the ability to adapt material quickly according to developments in technology and information (Chatterjee & Bhattacharjee, 2020).

Some researchers wonder whether advances in AI will challenge or even replace the significance of educators as many other jobs are replaced by automation (Rodrigues et al., 2023). The researcher also views this phenomenon from the perspective of the interpreting education. By the turn of the millennium, job opportunities for interpreters had experienced a dwindle for encountering an issue in common. That is, the advancement of technology is replacing the needs of humans as a vessel to cross the language barriers. Recent and growing numbers of articles and papers are also stating the relationship between the nature of interpreting and technological advancement as a sounding and promising tendencies (e.g. Fantinuoli, 2018, Pokorn and Mellinger, 2018). Other examples such as AI in Interpreting: An ethical consideration (Horváth, 2022), or Interpreting Vs Machines (Downie, 2019). These papers are aimed to find how the technological turn shift the interpreting work field and education.

The deductions and data from the said studies suggest that interpreting domain, both professionally and educationally, also need to adapt and consider to welcoming the flow of the technological changes. An interpret teacher should be able to introduce the said technologies for the students in their classes despite their personal opinion on AI usage and the technological advancement in general. Therefore, the researcher is interested in studying further regarding interpret teaching with the use of AI and technological advances from the lecturer's perspective.

Overviewing the statements above, for the scope of this research, the researcher identified several aspects that need to be considered. Among them are the complexity between previous studies and the diverse realities in the field, as well as the fact that access to and familiarity with interpreting tools among educators and students may not be uniform, the method used by the interpret lecturers to introduce AI and technologies may be challenging and still ineffective, ethical consideration that each interpret lecturers might have about AI and technologies that needs to be clarified before proposing the study to their students, and if possible, finding a solution for interpret lecturers to maintain the reliability of human interpreters whilst preparing future interpreters to co-exist with AI and machines interpreting

Lecturer’s perspectives are considered to be a crucial focus of this Research. This is because previous studies have largely focused only on the ethics of using this technology in the field of interpreting, as well as on the effectiveness and functioning of the interpreting tools itself objectively. The researcher believes that although the data gathered will be niche and cannot be considered to generalize the issue entirely, an examples of field experience and perspectives from the interpreting lecturers also hold significant value in determining how influential the use of technology and AI is within the scope of interpreting.

METHOD

This study will be conducted as qualitative research. The Qualitative method is applied as this study aims at providing an insight into the case of how interpreting teachers introduce

AI and the advent of technologies used on modern interpreting studies. According to (Moleong, 2018), qualitative research is a research that intends to understand the phenomena about what is experienced by research subject such as behavior, perception, motivation, action, and others.

For the design itself, the researcher chose a case study approach. According to Fraenkel and Wallen (2000), case study is a qualitative study approach that studies a single individual, group, or important example to formulate interpretations to the specific case or to provide useful generalization.

This research will be conducted within the scope of the Warmadewa interpreter's community located on the island of Bali. As for the participant of the study, the researcher hand pick two professional interpret lecturers from Warmadewa University in order to help determine the situation of the case more deeply with one of them acting as the primary subject, and the other as a control. According to Creswell (2016), purposeful sampling is aimed to learn and understand the central phenomenon by selecting individuals and sites intentionally.

To obtain the data for this study, the researcher uses three technique of data collection. The researcher uses in-depth open-ended interview with both of the participants as the primary technique. Followed by classroom observation and archive analysis to determine the validity of the data gathered from the interviews within the participants consents.

The data analysis technique used in this research was an interactive model of analysis according to miles and Huberman (1992:16). Miles and Huberman's technique is designed to help researchers decoding and analyse qualitative data efficiently.

RESULTS AND DISCUSSIONS

The rapid development of technology in interpreting has been acknowledged by both participants as an inevitable and necessary progression. This sentiment is consistent with broader trends in various professional fields where technological advancements are transforming traditional practices. In interpreting, the introduction of Computer-Assisted Interpreting (CAI) tools, Machine Interpreting (MI), and AI has been a game-changer. These tools are seen not merely as a trend but as essential enhancements to the quality and efficiency of interpreting services and studies.

The participants' perspectives find support in scholarly literature. Studies by O'Hagan and Ashworth (2002) and Popenici & Kerr (2017) emphasize the transformative impact of digital tools in translation and interpreting. These tools can significantly enhance productivity and accuracy, despite some resistance from traditionalists. The benefits of integrating technology, as highlighted by Bowker and Fisher (2010), far outweigh the drawbacks.

To successfully integrate technology in interpreting, balancing tradition and innovation is crucial. Participants emphasized that while embracing new tools, maintaining core interpreting skills is vital. This hybrid approach ensures that technology aids rather than replaces human expertise. Training and education programs must evolve to incorporate technological tools as complementary resources rather than replacements for traditional methods. Educators should ensure that students understand the limitations and ethical implications of these tools, fostering a holistic understanding of their role in interpreting.

Looking ahead, the role of technology in interpreting is expected to expand further. AI-driven real-time translation apps, advanced CAI tools, and virtual interpreting environments

will continue to shape the field. Interpreters who adapt to these changes will be better equipped to meet the demands of a rapidly changing global landscape.

The integration of AI and other technological tools in interpreting education also impacts students' engagement and motivation. Participants noted both benefits and potential pitfalls. The first participant uses a strategy of occasionally prohibiting these tools to ensure students develop resilience and independent problem-solving skills. The second participant expressed concerns about over-reliance on AI tools, which aligns with Fischer et al. (2020) and Parasuraman & Manzey (2010). Over-reliance can lead to passive learning behaviors and automation complacency, where students accept AI-generated translations without critical evaluation.

Finding a balance between leveraging technological tools to enhance learning and preventing over-dependence is a key challenge. Research by Kirschner and van Merriënboer (2013) suggests that while technology supports learning, it should not replace fundamental skill development. Educators must create an environment where technology augments learning rather than serving as a crutch.

Ethical considerations also play a significant role in the responsible use of AI tools in education. Transparency, accountability, and fairness are essential (Floridi et al. 2018). Issues such as data privacy, accuracy of AI outputs, and potential biases in AI algorithms must be addressed (Cath et al. 2018; Caliskan et al. 2017).

The first participant highlighted ongoing efforts at Warmadewa University to develop a curriculum that fully embraces technological advancements in interpreting. A focused approach in the coming years aims to systematically integrate AI and MI tools into teaching practices, improving efficiency, accuracy, and accessibility in interpreting training (Chung & Nation 2003).

In conclusion, this qualitative study reveals that while interpreting technology is seen as inevitable, it is not perceived as a threat to replace human interpreters. The integration methods applied by both participants are sufficient for now, but there is a need for updated curricula to provide proper training and guidance. Challenges such as over-reliance on technology and a decline in critical thinking skills must be addressed to ensure the effective use of interpreting tools.

CONCLUSION

Based on the analysis of the data obtained, the researcher can conclude as follows:

1) Both participants perceive the changes in the interpreting technology as something inevitable, but not something that should be considered a threat that will completely replace the role of interpreters in the near future. Both participants feel they must also be cautious about the accuracy of the translations and how they can optimally integrate these technologies into their work. Both participants hope for an update in the curriculum so that both teachers and students receive proper training guidance in using these interpreting tools. With this update, both participants believe that the translation evaluation system and ethical usage limitations will further enhance the efficiency of lecturers and students.
2) In the classroom itself, the integration methods applied by both participants are considered sufficient for the time being. The absence of a curriculum that emphasizing the ability to use interpreting tools means both participants have to find their own ways to integrate them. Both participants are aided in their work by tools that make

administrative tasks and material preparation more efficient. On the other hand, students appear more active and relaxed in contributing translations, and they are more engaged in understanding the context rather than spending time searching for the correct translation to interpret.

Challenges also arise alongside the positive impacts described. Particularly, there is a decline in students' interest and ability to perform interpretation. Students' confidence and work seem heavily dependent on these tools. They no longer possess sufficient critical thinking skills to interpret independently. The lack of understanding of the context they are translating also results in translations that are unnatural and robotic.

The researcher could conclude that on the interpreting study, there is a dire need of a curriculum update that could integrate these interpreting tools and AI to be used as effective as possible. Making technology the aids that it is intended to be, and not as a hinderance that could harm the interpreting learning activity.

REFERENCES

. Han, C. (2018). Quantitative research methods in translation and interpreting studies. *The Interpreter and Translator Trainer*. https://doi.org/10.1080/1750399x.2018.1466262

Afrouz, M., & Jamalimanesh, A. (2021). Rodríguez Melchor, María Dolores, Horváth, Ildikó and Ferguson, Kate (eds.), The Role of Technology in Conference Interpreter Training. New York: Peter Lang 2020. 245 pp. *Estudios de Traducción*. https://doi.org/10.5209/estr.71500

Algethami, G. (2022). Teachers' Perspectives towards Teaching English Online at the Tertiary Level in Saudi Arabia. *Arab World English Journal*. https://doi.org/10.24093/awej/covid2.21

Anggraeni, M. D., Mucharromah, R., Taqiyya, B. Z., Fadilah, R. E., Mahardika, I. K., & Yusmar, F. (2023). Perkembangan Teknologi Dan Komunikasi Dalam Pendidikan. *FKIP E-PROCEEDING*.

Arly, A., Dwi, N., & Andini, R. (2023, November). Implementasi Penggunaan Artificial Intelligence Dalam Proses Pembelajaran Mahasiswa Ilmu Komunikasi di Kelas A. In *Prosiding Seminar Nasional Ilmu Ilmu Sosial (SNIIS)* (Vol. 2, pp. 362-374).

Author, D., Library, B. T., & Height, S. (2005). Interpreting in the 21st Century. *Cadernos de Tradução*.

Bates, A. W. (2015). Teaching in a digital age: Guidelines for designing teaching and learning. Tony Bates Associates Ltd.

Baylor, A. L., & Ritchie, D. (2002). What factors facilitate teacher skill, teacher morale, and perceived student learning in technology-using classrooms? Computers & Education, 39(4), 395-414.

Baytak, A., Tarman, B., & Ayas, C. (2011). Experiencing technology integration in education: Children's perceptions. International Electronic Journal of Elementary Education, 3(2), 139-151.

Black, P., & Wiliam, D. (1998). Assessment and classroom learning. Assessment in Education: Principles, Policy & Practice, 5(1), 7-74.

Caliskan, A., Bryson, J. J., & Narayanan, A. (2017). Semantics derived automatically from language corpora contain human-like biases. Science, 356(6334), 183-186.

Campa, R. (2014). Technological growth and unemployment : a global scenario analysis. *Journal of Evolution and Technology*.

Cath, C., Wachter, S., Mittelstadt, B., Taddeo, M., & Floridi, L. (2018). Artificial intelligence and the 'good society': The US, EU, and UK approach. Science and Engineering Ethics, 24(2), 505-528.

Cath, C., Wachter, S., Mittelstadt, B., Taddeo, M., & Floridi, L. (2018). Artificial intelligence and the 'good society': The US, EU, and UK approach. Science and Engineering Ethics, 24(2), 505-528.

Chen, S., & Kruger, J.-L. (2022). The effectiveness of computer-assisted interpreting. *Translation and Interpreting Studies*. https://doi.org/10.1075/tis.21036.che

Chung, T. M., & Nation, P. (2003). Technical vocabulary in specialised texts. Reading in a Foreign Language, 15(2), 103-116.

Claudio Fantinuoli. 2018. Interpreting and technology: The upcoming technological turn. In Claudio Fantinuoli (ed.), Interpreting and technology, 1–12. Berlin: Language Science Press. DOI:10.5281/zenodo.149328

Claudio, F . (2018). Interpreting and Technology: *The upcoming technological turn*

Claudio, F . (2022). Conference Interpreting and new technologies. *The routledge handbook of conference interpreting.*

Corpas Pastor, G. (2018). Tools for Interpreters: The Challenges that Lie Ahead. *Current Trends InTranslation Teaching and Learning E*.

Daneshvar, Hanieh, Aida Firooziyan Pour Esfahani, Elham Yazdanmehr. 2020. The Role of Interpreters' Cultural Intelligence in Cross-cultural Encounters. International Journal of Linguistics, Literature and Translation (IJLLT). Vol. 3(8). DOI: 10.32996/ijllt.2020.3.8.6

Deci, E. L., & Ryan, R. M. (2000). The "what" and "why" of goal pursuits: Human needs and the self-determination of behavior. Psychological Inquiry, 11(4), 227-268.

Donkoh, S. (2023). Application of triangulation in qualitative research. *Journal of Applied Biotechnology & Bioengineering*. https://doi.org/10.15406/jabb.2023.10.00319

Downie, J. (2019). Interpreters vs Machines. In *Interpreters vs Machines*. https://doi.org/10.4324/9781003001805

Downie, J. (2020). What is interpreting? In *Interpreters vs Machines*. https://doi.org/10.4324/9781003001805-3

Fantinuoli, C. (2018). Interpreting and technology: the upcoming technological turn. *Language Science Press*.

Fantinuoli, Claudio. 2017a. Computer-assisted preparation in conference interpreting. Translation & Interpreting 9(2). 24–37.

Fantinuoli, Claudio. 2018b. The use of comparable corpora in interpreting practice and teaching. The Interpreters' Newsletter 1. 133–149.

Finn, Ed. 2017. What algorithms want: Imagination in the age of computing. Cambridge: MIT Press

Fischer, F., Kollar, I., Stegmann, K., & Wecker, C. (2020). Toward a theory of personal and social learning in networks and communities. In R. S. J. d. Baker & L. B. Shum (Eds.), The Cambridge Handbook of the Learning Sciences (2nd ed., pp. 448-464). Cambridge University Press.

Fischer, F., Kollar, I., Stegmann, K., & Wecker, C. (2020). Toward a theory of personal and social learning in networks and communities. In R. S. J. d. Baker & L. B. Shum (Eds.), The Cambridge Handbook of the Learning Sciences (2nd ed., pp. 448-464). Cambridge University Press.

Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., ... & Tamburrini, G. (2018). AI4People—An ethical framework for a good AI society: Opportunities, risks, principles, and recommendations. Minds and Machines, 28(4), 689-707.

Floridi, L., Cowls, J., Beltrametti, M., Chatila, R., Chazerand, P., Dignum, V., ... & Tamburrini, G. (2018). AI4People—An ethical framework for a good AI society: Opportunities, risks, principles, and recommendations. Minds and Machines, 28(4), 689-707.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. The Internet and Higher Education, 7(2), 95-105.

Garrison, D. R., & Kanuka, H. (2004). Blended learning: Uncovering its transformative potential in higher education. Internet and Higher Education, 7(2), 95-105.

Garrison, D. R., & Vaughan, N. D. (2008). Blended learning in higher education: Framework, principles, and guidelines. Jossey-Bass.

Gieshoff, A. C., & Albl-Mikasa, M. (2022). Interpreting accuracy revisited: a refined approach to interpreting performance analysis. *Perspectives: Studies in Translation Theory and Practice*. https://doi.org/10.1080/0907676X.2022.2088296

Gile, D. (2009). Interpreting studies: a critical view from within. *MonTi: Monografías de Traducción e Interpretación*. https://doi.org/10.6035/monti.2009.1.6

Gosper, M., Green, D., McNeill, M., Phillips, R., Preston, G., & Woo, K. (2008). The Impact of Web-Based Lecture Technologies on Current and Future Practices in Learning and Teaching. *Australian Learning and Teaching Council*.

Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), Handbook of Blended Learning: Global Perspectives, Local Designs (pp. 3-21). Pfeiffer Publishing.

Graham, C. R. (2006). Blended learning systems: Definition, current trends, and future directions. In C. J. Bonk & C. R. Graham (Eds.), Handbook of Blended Learning: Global Perspectives, Local Designs (pp. 3-21). Pfeiffer Publishing.

Guion, L. A., Diehl, D. C., & McDonald, D. (2011). Triangulation: Establishing the Validity of Qualitative Studies. *EDIS*. https://doi.org/10.32473/edis-fy394-2011

Han, C. (2022). Assessing spoken-language interpreting The method of comparative judgement. *Interpreting*.

Han, C. (2022). Assessing spoken-language interpreting. *Interpreting. International Journal of Research and Practice in Interpreting*. https://doi.org/10.1075/intp.00068.han

Han, L., Wang, Y., & Li, Y. (2022). Student Perceptions of Online Interpreting Teaching and Learning via the Zoom Platform. *TESL-EJ*. https://doi.org/10.55593/EJ.26101INT

Hastuningdyah, W. (2019). Understanding Interpreting Strategies: Case Study in Consecutive Interpreting in Jokowi and Malcolm Turnbull Press Conference. SALTeL Journal (Southeast Asia Language Teaching and Learning), 2(1), 57–63. https://doi.org/10.35307/saltel.v2i1.23

Hiltunen S., Pääkkönen R., Vik G.-V., Krause C. (2016). On interpreters' working memory and executive control. *Int. J. Biling.* 20 297–314. 10.1177/1367006914554406

Horváth, I. (2022). AI in interpreting: Ethical considerations. *Across Languages and Cultures*. https://doi.org/10.1556/084.2022.00108

Hubscher-Davidson, S. (2020). Ethical Stress in the Translation and Interpreting Professions. In *The Routledge handbook of translation and ethics*.

Hutchins, W. J. (2005). On the process of interpreting as articulated in the Framework of Knowledge. Meta: Journal des Traducteurs/Meta: Translators' Journal, 50(2), 588-605.

Johnson, L. C. (2023). Research Instruments. In *The Co-Workplace*. https://doi.org/10.59962/9780774850438-012

Julita, W., & Zulyusri, Z. (2023). Analysis of the Importance of Enhancing the Qualifications of Biology Teachers as Professional Educators in the 21st Century Digital Era. *Journal of Digital Learning and Education*. https://doi.org/10.52562/jdle.v3i2.744

Kadiyono, A. L. (2020). PELATIHAN PERSONAL BRANDING BAGI PERSIAPAN PENGEMBANGAN KARIR MAHASISWA TINGKAT AKHIR. *International Journal of Community Service Learning*. https://doi.org/10.23887/ijcsl.v4i4.29730

Kirschner, P. A., & van Merriënboer, J. J. G. (2013). Do learners really know best? Urban legends in education. Educational Psychologist, 48(3), 169-183.

Korpal, P., & Stachowiak-Szymczak, K. (2020). Combined problem triggers in simultaneous interpreting: exploring the effect of delivery rate on processing and rendering numbers. Perspectives: Studies in Translation Theory and Practice, 28(1), 126–143. https://doi.org/10.1080/0907676X.2019.1628285

Kurzweil, R. (2012). How technology will transform us. Atlantic Monthly, 310(1), 45-61.

Lee, J. (2020). The role of context in interpreting: A critical analysis. Interpreting, 22(1), 99-125.

Lee, J. (2020). The role of context in interpreting: A critical analysis. Interpreting, 22(1), 99-125.

Lee, J., & Schallert, D. L. (2008). Investigating cognitive processes and knowledge representations during second language reading: Integrating think-aloud and fMRI. Journal of Neurolinguistics, 21(5), 395-417.

Lewis, S. (2015). Qualitative Inquiry and Research Design: Choosing Among Five Approaches. In *Health Promotion Practice*. https://doi.org/10.1177/1524839915580941

Li, Y., & Dong, Y. (2022). Use of explicitation by interpreting students and its contribution to consecutive interpreting performance: A developmental perspective. Perspectives: Studies in Translation Theory and Practice, 30(1), 103–119. https://doi.org/10.1080/0907676X.2021.1892158

Liando, N. V. F., Tatipang, D. P., & Wuntu, C. N. (2023). TPACK Framework Towards 21st Century's Pre-Service English Teachers: Opportunities and Challenges in Application. Edumaspul: Jurnal Pendidikan, 7(1), 1799–1815. https://doi.org/10.33487/EDUMASPUL.V7I1.6479.

Malau, P. P., Lubis, S., & Mono, U. (2021). Errors in Consecutive Interpreting: A Case of Jessica Kumalawongso's Court. Language Literacy: Journal of Linguistics, Literature, and Language Teaching, 5(1), 71–79. https://doi.org/10.30743/ll.v5i1.2611

Means, B., Toyama, Y., Murphy, R., Bakia, M., & Jones, K. (2013). Evaluation of evidence-based practices in online learning: A meta-analysis and review of online learning studies. US Department of Education.

Meladina, Myke Fitria Sparingga. 2022. A Discourse Analysis On Students Skill In Interpreting English Sentences Into Indonesian. Lire Journal (Journal of Linguistics and Literature). Vol. 6(2). https://lirejournal.ubb.ac.id/index.php/LRJ/index

Mellasanti Ayuwardani. (2023). PEMAHAMAN MATERI TERHADAP HASIL BELAJAR MAHASISWA PADA MATAKULIAH PRAKTEK. *JURNAL EKONOMI BISNIS DAN MANAJEMEN*. https://doi.org/10.59024/jise.v1i2.130

Mellinger, C. D., & Pokorn, N. K. (2018). Community interpreting, translation, and technology. *Translation and Interpreting Studies*. https://doi.org/10.1075/tis.00019.int

Mertens, A., Roos, A., & Kollmeier, B. (2021). The role of ethics in automatic speech recognition systems for real-time captioning. The Journal of the Acoustical Society of America, 150(4), 3057-3066.

Mertens, A., Roos, A., & Kollmeier, B. (2021). The role of ethics in automatic speech recognition systems for real-time captioning. The Journal of the Acoustical Society of America, 150(4), 3057-3066.

Moleong, L. J. (2018). Metodologi penelitian kualitatif / penulis, Prof. DR. Lexy J. Moleong, M.A. *PT Remaja Rosdakarya*.

Montavon, G., Samek, W., & Müller, K. R. (2018). Methods for interpreting and understanding deep neural networks. In *Digital Signal Processing: A Review Journal*. https://doi.org/10.1016/j.dsp.2017.10.011

Mordini, E., & Viola, R. (Eds.). (2017). The ethics of biomedical big data. Springer International Publishing.

Nababan, M. (2007). Aspek Genetik, Objektif, Dan Afektif Dalam Penelitian Penerjemahan. *Linguistika*.

Neufeind, Max, Jacqueline O'Reilly & Florian Ranft (eds.). 2018. Work in the digital age: Challenges of the fourth industrial revolution. Lanham: Policy Network

Niska, H., & Snellman, L. (2017). Interpreter-mediated police interviews: A case of 'cultural' interpretations. European Journal of Policing Studies, 4(2), 132-153.

Nur Rabani, F. A. (2023). Analisis Minat Siswa Melanjutkan Studi Ke Perguruan Tinggi Sebagai Bentuk Investasi Pendidikan Untuk Meningkatkan Perekonomian. *Jurnal Pendidikan Sultan Agung*. https://doi.org/10.30659/jp-sa.3.2.113-122

Parasuraman, R., & Manzey, D. H. (2010). Complacency and bias in human use of automation: An attentional integration. Human Factors, 52(3), 381-410.

Pernice, Kara. 2017. F-shaped pattern of reading on the web: Misunderstood, but still relevant (even on mobile). Tech. rep. https://www.nngroup.com/articles/f-shaped-pattern-reading-web-content/.

Pöchhacker, F. (2023). Re-interpreting interpreting. *Translation Studies*. https://doi.org/10.1080/14781700.2023.2207567

Pöchhacker, F. (2023). Re-interpreting interpreting. *Translation Studies*. https://doi.org/10.1080/14781700.2023.2207567

Pym, A., & Grin, F. (2016). Translation and language policy in the EU: The central role of translation. Journal of Language and Politics, 15(3), 327-352.

Ross, Bella, Ekaterina Pechenkina, Carol Aeschliman & Anne-Marie Chase. 2017. Print versus digital texts: Understanding the experimental research and challenging the dichotomies. Research in Learning Technology 25(0).

Salaets, H., & Balogh, K. (2015). Development of reliable evaluation tools in legal interpreting: A test case. *Translation and Interpreting*. https://doi.org/10.12807/ti.107203.2015.a08

Selwyn, N. (2011). Education and technology: Key issues and debates. Continuum International Publishing Group.

Siemens, G. (2005). Connectivism: A learning theory for the digital age. International Journal of Instructional Technology and Distance Learning, 2(1), 3-10.

Silverman, D. (2013). Doing Qualitative Research: A Practical Handbook - David Silverman - Google Books. In *Sage Publications*.

Takeda, Kayoko & Jesús Baigorri Jalón (eds.). 2016. New insights in the history of interpreting. Amsterdam/Philadelphia: John Benjamins.

Timotheou, S., Miliou, O., Dimitriadis, Y., Sobrino, S. V., Giannoutsou, N., Cachia, R., Monés, A. M., & Ioannou, A. (2023). Impacts of digital technologies on education and factors influencing schools' digital capacity and transformation: A literature review. *Education and Information Technologies*. https://doi.org/10.1007/s10639-022-11431-8

Tiselius, E., & Sneed, K. (2020). Gaze and eye movement in dialogue interpreting: An eye-tracking study. *Bilingualism*. https://doi.org/10.1017/S1366728920000309

Tivyaeva, Irina. 2021. Exploring New Ways in Translator and Interpreter Training: A Student Adaptation Perspective. New Voices in Translation Studies. Vol. 24. Hal. 104-117

Triatmaja, M. F. (2019). Dampak artificial intelligence (AI) pada profesi akuntan. Seminar Nasional dan The 6th Call For Syariah Paper (SANCALL) 2019.

Valdeón, R. A. (2021). Perspectives on interpreting. In *Perspectives: Studies in Translation Theory and Practice*. https://doi.org/10.1080/0907676X.2021.1922130

Vygotsky, L. S. (1978). Mind in society: The development of higher psychological processes. Harvard University Press.

Wan, H., & Yuan, X. (2022). Perceptions of Computer-assisted Interpreting Tools in Interpreter Education in China's Mainland: Preliminary Findings of a Survey. *International Journal of Chinese and English Translation & Interpreting*. https://doi.org/10.56395/ijceti.v1i1.8

Wang, B. (2018). Takeda, Kayoko and Baigorri-Jalón, Jesús, eds. (2016): New Insights in the History of Interpreting. Amsterdam/Philadelphia: John Benjamins, 278 p. *Meta: Journal Des Traducteurs*. https://doi.org/10.7202/1043963ar

Warschauer, M., & Matuchniak, T. (2010). New technology and digital worlds: Analyzing evidence of equity in access, use, and outcomes. Review of Research in Education, 34(1), 179-225.

Wi, P., Salikim, S., & Susanti, M. (2021). Faktor-Faktor Yang Mempengaruhi Pemahaman Akuntansi (Studi Kasus Pada Mahasiswa Akuntansi Universitas Buddhi Dharma Tangerang). *ECo-Buss*. https://doi.org/10.32877/eb.v4i2.256

Wisal Ahmed Mohamed Saeed. 2019. Translation and interpretation the differences, the challenges, the qualities and requirements: A comparative study. International Journal of Contemporary Applied Researches Vol. 6, No. 6.

Wulansari, A., & Arvianti, G. (2020). *Technology and Its Requirement for Teaching Translation and Interpreting in Disruptive Era*. https://doi.org/10.4108/eai.12-10-2019.2292209

Wulansari, A., Arvianti, G. F., & Rekha, A. (2021). Icatforlearning Website for Teaching Translation and Interpreting Online Class. *NOBEL: Journal of Literature and Language Teaching*. https://doi.org/10.15642/nobel.2021.12.1.15-28

Xia, Q., Chiu, T. K. F., & Chai, C. S. (2023). The moderating effects of gender and need satisfaction on self-regulated learning through Artificial Intelligence (AI). *Education and Information Technologies*. https://doi.org/10.1007/s10639-022-11547-x

Xu, Ran. 2018. Corpus-based terminological preparation for simultaneous interpreting. Interpreting 20(1). 29–58

Yang, S. J. H., Ogata, H., Matsui, T., & Chen, N. S. (2021). Human-centered artificial intelligence in education: Seeing the invisible through the visible. *Computers and Education: Artificial Intelligence*. https://doi.org/10.1016/j.caeai.2021.100008

Yao, J. (2021) Interpreter's Position in the Process of Interpretation. *Open Journal of Applied Sciences*, **11**, 422-439. doi: 10.4236/ojapps.2021.104031

Zhang, H., Lee, I., Ali, S., DiPaola, D., Cheng, Y., & Breazeal, C. (2023). Integrating Ethics and Career Futures with Technical Learning to Promote AI Literacy for Middle School Students: An Exploratory Study. *International Journal of Artificial Intelligence in Education*. https://doi.org/10.1007/s40593-022-00293-3

Zhao, N. (2022). *Use of Computer-Assisted Interpreting Tools in Conference Interpreting Training and Practice During COVID-19*. https://doi.org/10.1007/978-981-19-6680-4_17