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Are subtitles useful for language learners?

Calum To

University of Oxford, Oxford, United Kingdom

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Abstract

Despite the seemingly commonsensical view that captions or subtitles aid comprehension, empirical research is less certain about their recommendation for all language learners. This review article introduces some of the theoretical foundations of multimedia learning before examining recent studies investigating the facilitative effect of L2 captions, L1 subtitles and dual-language subtitles. Qualitative insights from research are then presented, with implications for both research and teaching practice further discussed. The article concludes by underlining the importance of learner perspectives due to the complexity of factors affecting the pedagogical value of captions and subtitles.

Keywords captions, subtitles, redundancy effect, foreign language listening anxiety, language learning, multimedia learning

1. Introduction

The popularity of applications such as Language Reactor, with over two million users, suggests a widely-held view that on-screen text whilst viewing video in a second language supports both comprehension and language learning (*Language Reactor*, n.d.). However, empirical evidence is less certain on whether watching videos with captions/subtitles enhances comprehension more than those without (Zhang & Zou, 2022). This article will begin by looking at the theoretical background to multimedia learning, before moving to analyse evidence examining the ways in which different types of on-screen text might interact with language proficiency to impact comprehension. Research on learner perceptions will then be explored before looking at potential research and pedagogical implications.

2. Theoretical Background & Definitions

Comprehension will be understood to be a cognitive construct in which a coherent mental representation or structure is built (Gernsbacher, 1996; Mayer, 2005). Gernsbacher's Structure Building Framework posits that the basic building blocks of this foundational structure are memory nodes which are activated by incoming stimuli in the form of words, pictures or tones. This amodal conception is important in the context of the comprehension of video including both aural and visual, and verbal and non-verbal input. The ability to make inferences through global understanding or the use of contextual knowledge is also understood to play an important role in comprehension (Kintsch & Van Dijk, 1978). This conceptualisation is in line with Buck's (2001) default listening construct used for the assessment of listening comprehension. Although modality of input to some extent impacts the type of information attended to (Lund, 1991), the potential for visual representation of auditory input, for example where a mental image might be built from narration (Mayer, 2005), and vice-versa, is presumed to point to the existence of an underlying comprehension construct.

Cognitive cross-channel representation of images and sounds is fundamental to the multimedia principle that learning is facilitated more by words and pictures, than words alone (Mayer, 2005). Importantly, this is only possible when comprehenders have sufficient cognitive resources available, with the redundancy principle arguing that the presentation of the same information, for example in the form of video, narration *and* text, may lead to cognitive overload, interfering with comprehension (Sweller, 2005). However, this negative competition for processing capacity may only apply to first language comprehenders, with second language (L2) learning a potential boundary condition (Lee & Mayer, 2018). For L2 comprehenders, a reverse redundancy effect might allow for on-screen text to compensate for the transient nature of spoken language (Mayer et al., 2020). However, the interaction between this potential reverse redundancy effect and L2 proficiency will be returned to throughout a review of research findings.

Before moving to an analysis of this evidence, it is necessary to define the terms to be used. Following Montero Perez (2022), captions will refer to transcribed on-screen text in the target language (L2), with subtitles used for those that translate audio into a learner's first

language (L1). Dual subtitles will refer to simultaneous presentation of both. However, where necessary, the terminology used within studies to refer to experimental conditions will be used. Terms such as lower/higher-proficiency and beginner/advanced learners will be used according to each study's findings, although the issue of how these proficiency levels are determined will be further examined whilst identifying potential future research implications.

3. Captions

A number of studies have pointed to the positive contribution of captions to comprehension (e.g., Gass et al., 2019; Majuddin et al., 2021). In their meta-analysis, Montero Perez et al. (2013) found a significantly large effect (g = 0.99) of captioning on improved comprehension. Gernsbacher (2015) also argued for the relative benefit of captions, citing Yoshino et al. (2000), amongst others. However, in their study, though English captions were found to support comprehension, both L2 captions and L1 Japanese subtitles had limited impact with more difficult content and/or when participants' proficiency was low.

Aldukhayel's (2021) study also found a facilitative effect for both captions and subtitles, though this benefit was mediated by proficiency. Using a quasi-experimental design, intact classes were assigned to an L2 Captions Group (n = 35), an L1 Captions Group (n = 32), and a No Captions Group (n = 29), before watching a vlog twice. Within-class/group proficiency was measured using the Vocabulary Levels Test (VLT) (Schmitt et al., 2001). The use of the VLT is supported by the significant correlation between vocabulary knowledge (VK) and listening comprehension (Stæhr, 2009), although *aural* VK is likely closer linked to listening comprehension (Milton et al., 2010). A 10-item multiple-choice test measuring detailed comprehension was administered immediately after viewing, though not included in the study. Results found high-proficiency learners produced better comprehension scores with L2 captions. Low-proficiency learners scored non-significantly higher with L1 subtitles. Qualitative survey findings showed the L2 Captions group in particular felt captions positively affected comprehension, whilst both caption groups believed their comprehension would be negatively affected without captions. Unfortunately, the qualitative data did not distinguish between proficiency levels.

Despite the positive impact suggested by some research, it is important to note that other research has found captions/subtitles to have no discernible impact on comprehension (e.g., Fuentes-Luque & Campbell, 2020; Mayer et al., 2014). However, both Fuentes-Luque & Campbell (2020) and Mayer et al. (2014) note that the speech rate of their materials may account for the lack of a facilitative effect, with pace of speech identified as a possible boundary condition for the benefit of captions (Mayer et al., 2020). These and above findings suggest that as well as a reverse redundancy effect potentially applying to L2 captions for higher-proficiency learners, other factors may further impact the efficacy of captions in aiding comprehension.

4. Subtitles and Dual Subtitles

In addition to evidence arguing for the benefit of captions for more proficient learners, findings with lower-proficiency participants point to the relatively higher facilitative effects of L1 subtitles. Indeed, Hsieh (2020) found that though captions supported vocabulary learning, they had no statistically significant impact on listening comprehension for beginner learners. In contrast, beginner participants allocated to the subtitled condition in Bianchi & Ciabattoni's (2008) study scored higher on comprehension tests than captioned and control groups, whilst similar results were found for the beginner to low-intermediate participants in Pujadas & Muñoz's (2020) extensive viewing intervention. Wang (2019) found both freshman classes in their study benefited from the presence of onscreen Chinese (L1) subtitles, though results for other classes were mixed.

In Dizon & Thanyawatpokin's (2021) study, as well as L1 subtitles supporting comprehension more than English captions, their dual subtitle group achieved the highest comprehension scores. Their quasi-experimental design recruited participants (n = 96) from 9 intact classes at two private universities in Japan, who were quasi-randomly allocated to English captions, Japanese subtitles or dual subtitles groups to watch a sitcom episode. Proficiency of around A1-A2 level on the Common European Framework of Reference for Languages (CEFR) was determined using reported Jitsuyo Eigo Gino Kentei (Test in Practical English Proficiency) (EIKEN) and Test of English as a Foreign Language (TOEFL) scores. Vocabulary form recognition and meaning recall pretests and posttests were administered to measure vocabulary learning. A comprehension posttest of English true/false questions and open-ended questions in Japanese assessed global and detailed understanding, although these were not included in the study. As dual subtitles and L1 Japanese subtitles groups performed statistically significantly better on comprehension tests, it was concluded that L1 subtitles, either with or without the presence of L2 captions, were essential to support comprehension.

In addition to the above evidence supporting the use of L1 subtitles for beginner learners, other research suggests L2 captions may negatively affect knowledge comprehension for lower-proficiency learners. Chen et al. (2022) found L2 captions hindered the comprehension of their lower-proficiency participants (n = 98) during an "AR-enhanced theme-based contextualized learning" intervention (p. 381). Proficiency was determined by the standardised Basic Competence Test for Junior High School Students, with an achievement test of 24 multiple-choice questions (MCQ) administered after learning activities. The authors noted the lack of control group as a limitation, though their use of a single response method for assessment was not. Results were hypothesised to be due to the influence of the redundancy effect for lower-proficiency learners using L2 captions, though this was not found for lower-proficiency participants in the L1 subtitles or no captions conditions, or for their higher-proficiency learners. The boundary condition for the reverse redundancy effect then appears to be related to both caption/subtitle type and proficiency, with cognitive

overload potentially resulting from an interaction between lower-proficiency and L2 captions.

As well as L2 captions possibly causing a degree of cognitive overload, vocabulary knowledge must also be taken into account. Research has suggested that for relatively good comprehension of a listening text, 95% lexical coverage is necessary, roughly equivalent to knowing between the 2,000 and 3,000 most common word families (van Zeeland & Schmitt, 2013). For comparison, Li (2023) found that most participants in their study of Taiwanese university students had a proficiency level lower than B1, equating to a knowledge of at most 2,000 families, and likely less. As such, lower-proficiency learners are unlikely to achieve adequate lexical coverage of a listening text, even with the support of L2 captions. In Li's study, all participants who had mastered knowledge of the 3,000 word families obtained a B1 level or higher in the Test of English for International Communication (TOEIC) listening test. This suggests more proficient learners are likely closer to the requisite lexical coverage for adequate comprehension. Given the highly variable nature of spoken language (Field, 2019), it can be presumed that L2 captions for higher-proficiency learners facilitate connections between written knowledge of vocabulary and aural input, thereby mitigating extraneous cognitive load (Lee & Mayer, 2018).

5. Qualitative Findings

Given the complex picture that has been painted so far regarding the relationships between proficiency, caption type and other factors, it is particularly important to note the views of learners themselves. Although evidence recommends L2 captions be employed cautiously, qualitative findings suggest that rather than perceiving L2 captions as distracting, some lower-proficiency learners find the experience of using L2 captions relaxing (Pujadas & Muñoz, 2019). This is important given the potential tension and worry caused by listening activities (Ji et al., 2022), and in light of the role that digital media and social practices might play in contributing to self-directed learning outside of the classroom (Dizon, 2021).

Nevertheless, other qualitative research does seem to support the empirical conclusions detailed above regarding caption and subtitle use. For example, Shintaku (2022) found a general preference for Japanese audio with English L1 subtitles among their lower-proficiency learners. Higher-proficiency students preferred to use Japanese captions, as they noted subtitles lost some sociolinguistic information related to character relationships due to an inability to accurately convey the subtleties of the Japanese honorific system in translation. Dizon (2021) also found that lower-proficiency learners showed a preference towards the use of L1 subtitles or dual subtitles. Despite the potential for overuse, subtitles contributed positively to learning by facilitating comprehension and enjoyment. Alrefai & Bataineh's (2019) study of 25 Jordanian police officers also reported participants benefited from the use of captions and subtitles, though in this study it was the experience of using English captions (L2) and Arabic subtitles (L1) consecutively after watching a TED video. These positive feelings resulted in participants developing further self-confidence and listening practice enjoyment, findings echoed in other contexts, such as among English as a Foreign Language business learners (Hsu, 2018).

6. Research and Pedagogical Implications

From the studies examined so far, it might be possible to state that L1 subtitles support the understanding of lower-proficiency learners, whilst L2 captions facilitate the comprehension of more advanced learners. However, more detailed recommendations are difficult to make due to issues with much of the research literature. In attempting to synthesise the studies presented, this article has taken reported proficiency levels at 'face value'. Yet this is one area where consistency is sorely lacking. For example, Aldukhayel (2021), Dizon & Thanyawatpokin (2021) and Chen et al. (2022) all employed very different proficiency assessments. Although quasi-experimental designs are something of a necessary evil, steps to mitigate their shortcomings, such as thick descriptions of participants and proficiency, were largely not taken (Ballance, 2023). There are also issues with comprehension assessments. For example, though assessments were included in their reporting, the sole use of MCQ in Chen et al. (2022) and Aldukhayel (2021) may have led to construct underrepresentation (He & Jiang, 2020). Although Dizon & Thanyawatpokin (2021) assessed both global and detailed understanding using a variety of response methods, these tests were not included in reporting. Despite a longstanding recognition of the vital importance of experimental replication (Collins, 1985), this lack of transparency severely hinders replicability (Marsden, 2019).

As to whether use of on-screen text should be recommended to learners, it must first be noted that its use has potential value beyond enhancing comprehension. Although captions/subtitles may mean learners have fewer opportunities to develop important listening strategies (Vandergrift, 2004), some research has suggested that L2 captions may in fact support the development of speech segmentation and bottom-up listening skills, particularly amongst advanced learners (Charles & Trenkic, 2015; Yeldham, 2018). Montero Perez's (2022) state-of-the-art review found captioned video useful for a range of vocabulary learning benefits, with other findings suggesting captions may even promote pronunciation gains (Wisniewska & Mora, 2020). Other evidence points to the importance of individual differences and content type when making pedagogical decisions. For example, Winke et al. (2010) suggest that orthographic distance between L1 and L2 has an impact on the efficacy of showing captions during a first or second viewing. Rodgers & Webb (2017) found L2 captions facilitated their pre-intermediate learners' comprehension during the *first* and more difficult episodes of a TV series. Kruger et al. (2014) and Pannatier & Béntrancourt (2024) hypothesised that the presence of a speaker's face may draw learner attention away from captions/subtitles, limiting their effect.

Recommending L1 subtitles for lower-proficiency learners and L2 captions for more advanced students might be a good starting point, but individual circumstances and learning goals must also be taken into account.

7. Conclusion

The studies briefly examined here suggest that the use of captions or subtitles in improving comprehension may be proficiency-dependent. However, given a number of methodological issues with these findings, it would appear the best pedagogical suggestions are those that take into account the particular contexts in which these recommendations will play out. Learners should be advised as to the potential pedagogical benefits that captions and subtitles might offer for language learning, with priority given to how learners themselves might view the use of on-screen text, and its contribution to feelings of learner efficacy and enjoyment.

As with most issues related to educational decisions, the use of captions and subtitles has excited considerable academic debate. However, the findings of the empirical evidence presented here have hopefully pointed to the extraordinarily intricate interplay of a myriad of factors that might impact the pedagogical value of on-screen text. This complexity highlights the need for learners and teachers to have access to more methodologically rigorous research so as to make the best decisions in their own contexts.

Calum To graduated from St Hilda's College, University of Oxford in 2012 with a BA (Hons) in History before completing the Cambridge CELTA and moving to Vietnam as a fledgling teacher and heritage language learner. Having taught across a range of educational contexts in Vietnam, China and Japan, he decided to pursue an MSc in Applied Linguistics for Language Teaching at St Anne's College, University of Oxford. His research interests, drawn from his own background and teaching experience, are related to Global Englishes, listening instruction pedagogy, sociolinguistics and accent varieties.
Email: calumphilipto@gmail.com

References

Aldukhayel, D. (2021). The effects of captions on L2 learners' comprehension of vlogs. *Language Learning*, *25*(2), 178–191. http://hdl.handle.net/10125/73439

Alrefai, A., & Bataineh, R. (2019). Potential effectiveness of TED talks in developing listening reflections of Jordanian participants in United Nations Police Monitors Courses. *International Journal for Innovation Education and Research*, *7*(10), 929–944. https://doi.org/10.31686/ijier.vol7.iss10.1852

Ballance, O. J. (2023). Sampling and randomisation in experimental and quasi-experimental CALL studies: Issues and recommendations for design, reporting, review, and interpretation. *ReCALL*, 1–14. https://doi.org/10.1017/S0958344023000162

Bianchi, F., & Ciabattoni, T. (2008). Captions and subtitles in EFL learning: An investigative study in a comprehensive computer environment. In A. Baldry, M. Pavesi, C. Taylor Torsello, & C. Taylor (Eds.), *From Didactas to Ecolingua: An Ongoing Research Project on Translation and Corpus Linguistics* (pp. 69–90). Edizioni Universita di Trieste.

Buck, G. (2001). *Assessing listening*. Cambridge University Press; Cambridge Core. https://doi.org/10.1017/CBO9780511732959

Charles, T., & Trenkic, D. (2015). Speech segmentation in a second language: The role of bi-modal input. In Y. Gambier, A. Caimi, & C. Mariotti (Eds.), *Subtitles and language learning: Principles, strategies and practical experiences* (pp. 173–199). Peter Lang.

Chen, M.-P., Wang, L.-C., Zou, D., Lin, S.-Y., Xie, H., & Tsai, C.-C. (2022). Effects of captions and English proficiency on learning effectiveness, motivation and attitude in augmented-reality-enhanced theme-based contextualized EFL learning. *Computer Assisted Language Learning*, *35*(3), 381–411. https://doi.org/10.1080/09588221.2019.1704787

Collins, H. (1985). *Changing order: Replication and induction in scientific practice*. University of Chicago Press.

Dizon, G. (2021). Subscription video streaming for informal foreign language learning: Japanese EFL students' practices and perceptions. *TESOL Journal*, *12*(2), e566. https://doi.org/10.1002/tesj.566

Dizon, G., & Thanyawatpokin, B. (2021). Language learning with Netflix: Exploring the effects of dual subtitles on vocabulary learning and listening comprehension. *CALL-EJ*, *22*(3), 52–65.

Field, J. (2019). Second language listening: Current ideas, current issues. In A. Benati & J. W. Schwieter (Eds.), *The Cambridge handbook of language learning* (pp. 283–319). Cambridge University Press. https://doi.org/10.1017/9781108333603.013

Fuentes-Luque, A., & Campbell, A. P. (2020). Using subtitling to improve military ESP listening comprehension: *Ibérica*, *40*, 245–266.

Gass, S., Winke, P., Isbell, D. R., & Ahn, J. (2019). How captions help people learn languages: A working-memory, eye-tracking study. *Language Learning*, *23*(2), 84–104.

Gernsbacher, M. A. (1996). The Structure Building Framework: What it is, what it might also be, and why. In B. K. Britton & A. C. Graesser (Eds.), *Models of understanding text* (pp. 289–311). Lawrence Erlbaum Associates, Inc.

Gernsbacher, M. A. (2015). Video captions benefit everyone. *Policy Insights from the Behavioral and Brain Sciences*, *2*(1), 195–202. https://doi.org/10.1177/2372732215602130

He, L., & Jiang, Z. (2020). Assessing second language listening over the oast twenty years: A review within the socio-cognitive framework. *Frontiers in Psychology*, *11*, Article 2123. https://doi.org/10.3389/fpsyg.2020.02123

Hsieh, Y. (2020). Effects of video captioning on EFL vocabulary learning and listening comprehension. *Computer Assisted Language Learning*, *33*(5–6), 567–589. https://doi.org/10.1080/09588221.2019.1577898

Hsu, H.-T. (2018). Incidental professional vocabulary acquisition of EFL business learners: Effect of captioned video with glosses. *The JALT CALL Journal*, *14*(2), 119–142. https://doi.org/10.29140/jaltcall.v14n2.227

Ji, S., Qin, X., & LI, K. (2022). A systematic review of foreign language listening anxiety: Focus on the theoretical definitions and measurements. *Frontiers in Psychology*, *13*, 859021. https://doi.org/10.3389/fpsyg.2022.859021

Kintsch, W., & Van Dijk, T. A. (1978). Toward a model of text comprehension and production. *Psychological Review*, *85*(5), 363–394. https://doi.org/10.1037/0033-295X.85.5.363

Kruger, J.-L., Hefer, E., & Matthew, G. (2014). Attention distribution and cognitive load in a subtitled academic lecture: L1 vs. L2. *Journal of Eye Movement Research*, *7*(5), Article 5. https://doi.org/10.16910/jemr.7.5.4

Language Reactor. (n.d.). https://www.languagereactor.com/

Lee, H., & Mayer, R. E. (2018). Fostering learning from instructional video in a second language. *Applied Cognitive Psychology*, *32*(5), 648–654. https://doi.org/10.1002/acp.3436

Li, C. (2023). Exploring aural vocabulary knowledge for TOEIC as a language exit requirement in higher education in Taiwan. *International Review of Applied Linguistics in Language Teaching*. https://doi.org/10.1515/iral-2023-0021

Lund, R. J. (1991). A comparison of second language listening and reading comprehension. *The Modern Language Journal*, *75*(2), 196–204. https://doi.org/10.2307/328827

Majuddin, E., Siyanova-Chanturia, A., & Boers, F. (2021). Incidental acquisition of multiword expressions through audiovisual materials. *Studies in Second Language Acquisition*, *43*(5), 985–1008. https://doi.org/10.1017/S0272263121000036

Marsden, E. (2019). Methodological transparency and its consequences for the quality and scope of research. In J. McKinley & H. Rose (Eds.), *The Routledge Handbook of Research Methods in Applied Linguistics* (pp. 15–28). Routledge. https://doi.org/10.4324/9780367824471

Mayer, R. E. (2005). Cognitive theory of multimedia learning. In R. E. Mayer (Ed.), *The Cambridge handbook of multimedia learning* (pp. 31–48). Cambridge University Press. https://doi.org/10.1017/CBO9780511816819.004

Mayer, R. E., Fiorella, L., & Stull, A. (2020). Five ways to increase the effectiveness of instructional video. *Educational Technology Research and Development*, *68*(3), 837–852. https://doi.org/10.1007/s11423-020-09749-6

Mayer, R. E., Lee, H., & Peebles, A. (2014). Multimedia learning in a second language: A cognitive load perspective. *Applied Cognitive Psychology*, *28*(5), 653–660. https://doi.org/10.1002/acp.3050

Milton, J., Wade, J., & Hopkins, N. (2010). Aural word recognition and oral competence in English as a foreign language. In R. Chacón-Beltrán, Abello-Contesse, & M. Mar Torreblanca-López (Eds.), *Insights into Non-Native Vocabulary Teaching and Learning* (pp. 83–98). https://doi.org/10.21832/9781847692900-007

Montero Perez, M. (2022). Second or foreign language learning through watching audio-visual input and the role of on-screen text. *Language Teaching*, *55*(2), 163–192. https://doi.org/10.1017/S0261444821000501

Montero Perez, M., Van Den Noortgate, W., & Desmet, P. (2013). Captioned video for L2 listening and vocabulary learning: A meta-analysis. *System*, *41*(3), 720–739. https://doi.org/10.1016/j.system.2013.07.013

Pannatier, M., & Béntrancourt, M. (2024). Learning from academic video with subtitles: When foreign language proficiency matters. *Learning and Instruction*, *90*, 101863. https://doi.org/10.1016/j.learninstruc.2023.101863

Pujadas, G., & Muñoz, C. (2019). Extensive viewing of captioned and subtitled TV series: A study of L2 vocabulary learning by adolescents. *The Language Learning Journal*, *47*(4), 479–496. https://doi.org/10.1080/09571736.2019.1616806

Pujadas, G., & Muñoz, C. (2020). Examining adolescent EFL learners' TV viewing comprehension through captions and subtitles. *Studies in Second Language Acquisition*, *42*(3), 551–575. https://doi.org/10.1017/S0272263120000042

Rodgers, M. P. H., & Webb, S. (2017). The effects of captions on EFL learners' comprehension of English-language television programs. *CALICO Journal*, *34*(1), 20–38. https://doi.org/10.1558/cj.29522

Schmitt, N., Schmitt, D., & Clapham, C. (2001). Developing and exploring the behaviour of two new versions of the Vocabulary Levels Test. *Language Testing*, *18*(1), 55–88. https://doi.org/10.1177/026553220101800103

Shintaku, K. (2022). Self-directed learning with anime: A case of Japanese language and culture. *Foreign Language Annals*, *55*(1), 283–308. https://doi.org/10.1111/flan.12598

Stæhr, L. S. (2009). Vocabulary knowledge and advanced listening comprehension in English as a foreign language. *Studies in Second Language Acquisition*, *31*(04), 577. https://doi.org/10.1017/S0272263109990039

Sweller, J. (2005). The redundancy principle in multimedia learning. In R. E. Mayer (Ed.), *The Cambridge handbook of multimedia learning* (pp. 159–168). Cambridge University Press. https://doi.org/10.1017/CBO9780511816819.011

van Zeeland, H., & Schmitt, N. (2013). Lexical coverage in L1 and L2 listening comprehension: The same or different from reading comprehension? *Applied Linguistics*, *34*(4), 457–479. https://doi.org/10.1093/applin/ams074

Vandergrift, L. (2004). Listening to learn or learning to listen? *Annual Review of Applied Linguistics*, *24*, 3–25. https://doi.org/10.1017/S0267190504000017

Wang, Y. (2019). Effects of L1/L2 captioned TV programs on students' vocabulary learning and

comprehension. *CALICO Journal*, *36*(3), 204–224. https://doi.org/10.1558/cj.36268
Winke, P., Gass, S., & Sydorenko, T. (2010). The effects of captioning videos used for foreign language listening activities. *Language Learning*, *14*(1), 65–86.
Wisniewska, N., & Mora, J. C. (2020). Can captioned video benefit second language pronunciation? *Studies in Second Language Acquisition*, *42*(3), 599–624. https://doi.org/10.1017/S0272263120000029
Yeldham, M. (2018). Viewing L2 captioned videos: What's in it for the listener? *Computer Assisted Language Learning*, *31*(4), 367–389. https://doi.org/10.1080/09588221.2017.1406956
Yoshino, S., Kano, N., & Akahori, K. (2000). The effects of English and Japanese captions on the listening comprehension of Japanese EFL students. *Language Laboratory*, *37*, 111–130. https://doi.org/10.24539/llaj.37.0_111
Zhang, R., & Zou, D. (2022). A state-of-the-art review of the modes and effectiveness of multimedia input for second and foreign language learning. *Computer Assisted Language Learning*, *35*(9), 2790–2816. https://doi.org/10.1080/09588221.2021.1896555

Conflict of Interest

The authors declare that the research was conducted in the absence of any commercial or financial relationships that could be construed as a potential conflict of interest.