



Analysis of the SAMR Model and Psychological Approach on Duolingo Livestreams by Hololive VTubers in Learning Japanese

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Abstract: This qualitative research endeavors to investigate the innovative intersection of technology, persona, and psychology in language education through a unique lens—the world of VTuber Hololive Duolingo livestreams. The study's primary objective is to analyze the transformative potential of this approach to language learning, guided by the SAMR (Substitution, Augmentation, Modification, Redefinition) model and psychological perspectives. Employing purposive sampling, the research centers around six Hololive VTubers: Ceres Fauna, Ouro Kronii, Nanashi Mumei, Gawr Gura, Ninomae Ina'nis, and Moona Hoshinova. The investigation uncovers how these VTubers, each with distinct personas, employ the Duolingo application to teach Japanese on livestreams and its impact on viewers' language acquisition. The findings illuminate the multifaceted effects of technology integration, ranging from familiarity to transformative language learning experiences using SAMR, accompanied by psychological engagement and motivation. This study contributes to the evolving landscape of language education in the digital age and offers a foundation for future research in this captivating domain.

Keywords: VTuber, Duolingo, SAMR

Introduction

The digital age has ushered in a paradigm shift in language education (Wang et al., 2021). The ubiquity of smartphones, online resources, and interactive platforms has made language learning more accessible than ever before (Godwin-Jones, 2021). Learners are no longer confined to traditional classroom settings but can now harness the power of technology to study languages on their own terms. This digital transformation has democratized language education, enabling individuals from diverse backgrounds to embark on language learning journeys with unprecedented flexibility and convenience (Pardayeva, 2023).

VTubers, or Virtual YouTubers, have gained immense popularity within online communities for their ability to create unique and immersive content using virtual avatars (Mohammad, Saifurrahman, Rausyan Fiqrussalam, Sulthoni Umar, et al., 2023). These digital personalities, while operating behind the screen, have successfully forged authentic connections with their audiences. Viewers are drawn to VTubers not only for their entertaining content but also for the engaging and often interactive nature of their online presence. The VTuber culture's emphasis on audience engagement, authenticity, and a sense of community closely aligns with language learning objectives, where interactivity, cultural immersion, and community engagement are key elements of successful language acquisition (Mohammad, Saifurrahman, Rausyan Fiqrussalam, Umar Sulthoni, et al., 2023).

Hololive, a prominent agency within the VTuber landscape, is known for its diverse roster of talents, each with a distinct virtual persona and content style (Nordvall, 2021). Hololive talents have garnered a dedicated fanbase for their creativity and interactivity during livestreams, which often feature a wide range of content, from gaming to music. In a strategic move, several Hololive talents have embraced Duolingo, a well-known language learning application, as a platform for both entertainment and educational content (Shortt et al., 2023). Duolingo's gamified approach to language learning pairs well with VTubers of Hololive's ethos of fun and interactive livestreaming, creating a dynamic space for learners and enthusiasts to engage with the Japanese language in a novel and exciting way (Munday, 2015). The agency's foray into language education reflects a broader trend where digital influencers and online communities are becoming significant players in reshaping how languages are taught and learned.

The SAMR model, which stands for Substitution, Augmentation, Modification, and Redefinition, is a framework designed to assess the integration and impact of technology in education. It classifies the use of technology into four levels: Substitution, where technology serves as a direct substitute for a traditional tool or process; Augmentation, where technology enhances the traditional approach; Modification, where technology leads to a significant redesign of the learning task; and Redefinition, where technology enables entirely new and transformative learning experiences that were previously inconceivable (Medel et al., 2008). The SAMR model helps educators and researchers evaluate how technology is employed in educational contexts and its potential to bring about innovative and meaningful changes in teaching and learning (Jude et al., 2014).

This study is aimed at delving into the intersection of VTuber culture, technology-enhanced language learning, and audience engagement within the context of Vtubers of Hololive's use of Duolingo. We will employ the SAMR model to assess the degree to which Duolingo livestreams by Vtubers of Hololive talents represent Substitution, Augmentation, Modification, or Redefinition in the context of language learning. By examining the impact of VTubers, visual personas, and innovative language learning methods, we aim to contribute to our understanding of the digital age's evolving role in language education. Through this exploration, we seek to provide insights that will be valuable not only for educators but also for those interested in the dynamic intersection of technology, culture, and language learning.

Methodology

This study employs a qualitative descriptive research design, which aims to provide an in-depth and comprehensive understanding of the phenomenon under investigation. Qualitative description is particularly suited for exploring complex, real-world scenarios, as it allows for rich and detailed insights into the research subject (Sugiyono, 2019). The data for this research will be gathered by conducting a purposive sampling of Duolingo livestreams featuring VTuber talents from the Hololive agency. The search criteria will include using the keywords "Duolingo Hololive" with a filter set to "over 20 minutes." This search strategy will yield a selection of VTuber livestreams where Hololive talents are engaged in learning the Japanese language using the Duolingo application. Notable examples of these livestreams include Ceres Fauna Ch. hololive-EN, Ouro Kronii Ch. hololive-EN, Nanashi Mumei Ch. hololive-EN, Gawr Gura Ch. hololive-EN, Ninomae Ina'nis Ch. hololive-EN, and Moona Hoshinova hololive-ID. These streams will be included in the study based on their alignment with the research objectives.

The data collected will be analyzed using a dual approach, incorporating both the SAMR (Substitution, Augmentation, Modification, Redefinition) model and a psychological perspective. The SAMR model will be utilized to assess the extent to which Duolingo is integrated into the VTuber livestreams, categorizing the use into one of the four levels: Substitution, Augmentation, Modification, or Redefinition. This analysis will help determine the transformative potential of the technology in language learning. In parallel, a psychological approach will be applied to explore the emotional and motivational impact of VTuber personas, visual elements, and interactivity on the audience's language learning experience. Qualitative data analysis software will be used to facilitate the coding and thematic analysis of the gathered data.

Result and Discussion

Data Description

The data collected for this research was obtained through targeted searches on YouTube using the keywords "Duolingo Hololive" with a filter set to "over 20 minutes." This

specific search criterion was chosen to identify and retrieve Duolingo livestreams conducted by VTubers affiliated with the Hololive agencies. The search results yielded a selection of livestreams that showcased VTubers engaged in learning the Japanese language while interacting with their viewers. The chosen VTubers each bring their unique personas and themes to the language learning experience, creating an intriguing and diverse dataset for analysis.

1. Ceres Fauna Ch. hololive-EN (Keeper of Nature) – One of Ceres Fauna's livestream, focused on learning Japanese, has attracted approximately 70 thousand views. This indicates a significant level of audience interest in the language learning content provided by this VTuber, known for her persona as the "Keeper of Nature."
2. Ouro Kronii Ch. hololive-EN (Warden of Time) - Ouro Kronii, embodying the persona of the "Warden of Time," has garnered a substantial audience, with her Japanese language learning livestream amassing 215 thousand views. The interest in her time-themed persona may be reflected in the viewer engagement.
3. Nanashi Mumei Ch. hololive-EN (Owl) - Nanashi Mumei, characterized by the persona of an owl anime, has a Japanese language learning livestream with 217 thousand views. The unique and visually engaging persona contributes to viewer interest.
4. Gawr Gura Ch. hololive-EN (Shark) - Gawr Gura, known as the Shark Anime, has achieved remarkable popularity, as her Japanese language learning livestream boasts a staggering 3.1 million views. This high view count demonstrates the strong appeal of her persona and language learning content.
5. Ninomae Ina'nis Ch. hololive-EN (Tako/Kraken Priestess) - Ninomae Ina'nis, adopting the persona of a kraken, has engaged an audience of 220 thousand views in her Japanese language learning livestream, showcasing the captivating nature of her character.
6. Moona Hoshinova hololive-ID (Moon Princess) - Moona Hoshinova, as a "Moon Princess," has attracted 76 thousand views to her Japanese language learning livestream. Her unique persona adds an element of enchantment to the language learning experience.

The varying view counts across these VTubers' livestreams reflect their individual popularity and the diverse appeal of their personas and language learning content. The high view counts indicate a strong interest and engagement from viewers, suggesting that the combination of VTuber personas and language learning content is a compelling and effective approach to language education.

SAMR Model

Substitution (S)

The analysis of Duolingo livestreams featuring VTuber Hololive talents reveals that, at the Substitution level, technology primarily serves as a direct substitute for traditional

language learning tools. In these streams, Duolingo essentially replaces traditional language textbooks or flashcards. The VTubers employ the Duolingo application on livestreams as a means to engage their audience in language learning. While the technology is integrated effectively into the livestreams, the primary function at this level is to provide a virtual platform for vocabulary and grammar practice.

The Substitution level of SAMR demonstrates that the VTubers are harnessing technology to make language learning more accessible and interactive. Viewers can observe the VTubers using the Duolingo app, answer language exercises, and track their progress. The use of Duolingo as a direct substitute for conventional learning materials signifies a fundamental incorporation of technology into the language learning process. However, this analysis indicates that there is potential for deeper integration and more transformative uses of technology to enhance the language learning experience..

The psychological implications at the Substitution level reveal a significant psychological comfort in familiarity. Cognitive Load Theory suggests that individuals have a limited cognitive capacity for processing new information and that learning is more effective when it aligns with existing cognitive structures and does not overwhelm learners (Sweller et al., 2011). Viewers engaging in language learning through Duolingo in a VTuber livestream environment may experience a sense of security rooted in traditional learning methods. The substitution of technology does not disrupt established learning patterns but rather provides a modernized platform for the continuation of language acquisition. Psychologically, this transition may be welcomed as it maintains a bridge to established learning processes. It's important to consider how this familiarity contributes to the motivation and engagement of viewers. In this context, viewers may perceive a smoother transition to a digital learning environment while still benefitting from the well-established practices of traditional learning together with VTuber. This psychological comfort in familiarity is consistent with the principles of Cognitive Load Theory, where aligning with existing mental frameworks can enhance the learning experience.

Augmentation (A)

At the Augmentation level, the analysis of Duolingo livestreams featuring VTuber Hololive talents demonstrates that technology enhances the traditional language learning process. In these streams, Duolingo serves not only as a substitute for traditional materials but also as a tool that augments and enriches the language learning experience. The VTubers make use of Duolingo's interactive features to actively engage their audience, introducing gamification elements such as quizzes, challenges, and real-time progress tracking. This level of technology integration goes beyond mere substitution, as it enhances the learning experience by introducing elements of competition and interactivity, which are likely to have a positive psychological impact on viewers.

From a psychological perspective, the Augmentation level highlights the role of technology in making language learning more engaging and motivating. Self-Determination Theory is a framework that suggests individuals are more motivated when they feel a sense of autonomy, competence, and relatedness in their activities (Ryan et al.,

2009). The interactive nature of Duolingo within the VTuber livestreams fosters a sense of participation and competition among viewers. Gamified features, rewards, and challenges contribute to the psychological engagement of the audience. These elements can evoke a sense of accomplishment and reward, which may enhance motivation and overall satisfaction with the language learning experience. The psychological impact of this level suggests that viewers are not only learning but actively enjoying the process, potentially strengthening their commitment to language acquisition. When viewers actively enjoy the learning process and perceive a sense of accomplishment and reward, it aligns with the principles of SDT, as it fosters a greater commitment to language acquisition driven by intrinsic motivation.

Modification (M)

At the Modification level, the analysis of Duolingo livestreams featuring VTuber Hololive talents reveals a significant redesign of the language learning task through the integration of technology. In these streams, Duolingo goes beyond mere substitution or augmentation; it leads to a profound transformation of the learning experience. VTubers incorporate technology in a way that redefines how viewers engage with language learning. This level of technology integration involves the creation of new and innovative learning activities and approaches, such as collaborative challenges, real-time language exercises, and interactive storytelling using the Japanese language. This transformation not only impacts how language is taught but also how it is experienced, providing a fresh and exciting perspective on language acquisition.

From a psychological perspective, the Modification level demonstrates the potential for technology to create a dynamic and motivating learning environment. The innovative and interactive elements introduced through Duolingo in VTuber Hololive streams generate a sense of novelty and challenge for the audience. This psychological impact can stimulate curiosity, engagement, and a sense of mastery, all of which contribute to heightened motivation and a deeper commitment to language learning (Arnone et al., 2011). The redesign of the learning task results in a more engaging and immersive experience, potentially fostering a greater sense of relatedness to the language and the VTuber instructors, as viewers become active participants in the creative language learning process. The Modification level not only represents a technological transformation but also an innovative shift in the psychology of language learners. By offering a fresh and dynamic approach to language acquisition, viewers are likely to experience heightened motivation, curiosity, and engagement. The redesign of the language learning task introduces a sense of novelty and challenge, which can significantly impact how viewers relate to the language and the VTubers guiding them.

Redefinition (R)

At the Redefinition level, the analysis of Duolingo livestreams featuring VTuber Hololive talents demonstrates that technology enables entirely new and transformative learning experiences in the context of language acquisition. Duolingo, when integrated into

these streams, does not merely augment or modify the traditional language learning task; it completely redefines how language is learned and experienced. The VTubers, at this level, use technology in innovative ways, creating a dynamic and interactive environment where language learning transcends its traditional boundaries. The language learning process takes on new dimensions, such as collaborative storytelling, virtual language immersion, and the creation of fictional language scenarios that engage the audience in a manner previously unattainable through traditional means.

From a psychological perspective, the Redefinition level is characterized by a profound shift in the psychological engagement of language learners. Technology at this level enables viewers to immerse themselves in an entirely new learning context, blurring the lines between education and entertainment. The psychological impact is transformative, as viewers become active participants in immersive language experiences that extend beyond the boundaries of conventional language learning. The engagement at this level is characterized by a sense of adventure, curiosity, and a deep connection to the language and the VTuber as instructors (Arnone et al., 2011). The redefined learning experiences have the potential to create a strong emotional bond with the language and the VTuber hosts, leading to heightened motivation and a commitment to continued language acquisition. The Redefinition level represents a remarkable convergence of technology and psychology in language learning. The transformative potential of technology in VTuber Hololive Duolingo livestreams results in new and immersive language experiences that have the power to captivate and motivate viewers in ways previously unimagined. The redefinition of language learning tasks can create a sense of adventure and emotional connection, further reinforcing viewers' motivation and commitment to language acquisition.

Conclusion

The integration of the SAMR model and psychological perspectives in the analysis of Duolingo livestreams by VTuber Hololive talents engaged in Japanese language learning has shed light on the transformative potential of this innovative approach to language education. Through the lens of SAMR, we have identified four distinct levels of technology integration: Substitution, Augmentation, Modification, and Redefinition, each offering a unique perspective on the impact of technology on language learning.

At the Substitution level, technology serves as a language learning substitute, aligning with existing cognitive structures and providing a sense of familiarity and continuity in the language learning process. This level, in line with principles of Cognitive Load Theory, suggests that technology can facilitate a smoother transition to a digital learning environment, maintaining connections to traditional learning methods. The Augmentation level showcases technology's role in making language learning more engaging and motivating, driven by elements of competition, gamification, and the evocation of a sense of accomplishment. This aligns with Self-Determination Theory, as viewers actively enjoy the learning process, potentially strengthening their intrinsic motivation and commitment to language acquisition. The Modification level introduces a significant redesign of the language learning task, resulting in a dynamic and immersive learning environment. This

shift not only transforms language education but also has the potential to profoundly impact the psychology of learners. It stimulates curiosity, novelty, and a sense of mastery, fostering a deep connection to the language and VTuber instructors. Finally, at the Redefinition level, technology enables entirely new and transformative learning experiences that blur the lines between education and entertainment. This level aligns with Self-Determination Theory, fostering heightened motivation, curiosity, and engagement. The redefined learning experiences create a sense of adventure, emotional connection, and a commitment to language acquisition.

Collectively, the SAMR model and psychological perspectives demonstrate the multidimensional impact of VTuber Hololive Duolingo livestreams on language learning. They offer diverse and engaging language experiences, encouraging viewers to actively participate in their language learning journey. This study contributes to our understanding of the evolving role of technology and psychology in language education and paves the way for future research in this innovative intersection of VTuber culture, technology, and language acquisition. Future researchers can conduct longitudinal studies to assess the long-term impact of Hololive Vtubers in Duolingo livestreams on language acquisition. Tracking the progress and language proficiency of viewers over extended periods can provide valuable insights into the sustainability of the learning experience. Comparative studies could be carried out to evaluate the effectiveness of Hololive Vtubers in Duolingo livestreams against traditional language learning methods or other language learning apps. Understanding the relative advantages and disadvantages of this unique approach can guide learners and educators in making informed choices.

References

- Arnone, M. P., Small, R. V., Chauncey, S. A., & McKenna, H. P. (2011). Curiosity, interest and engagement in technology-pervasive learning environments: A new research agenda. *Educational Technology Research and Development*, 59(2), 181–198. <https://doi.org/10.1007/s11423-011-9190-9>
- Godwin-Jones, R. (2021). Evolving technologies for language learning. *Language Learning & Technology ISSN*, 25(3), 6–26. <http://hdl.handle.net/10125/73443>
- Jude, L., Kajura, M., & Birevu, M. (2014). Adoption of the SAMR Model to Assess ICT Pedagogical Adoption: A Case of Makerere University. *International Journal of E-Education, e-Business, e-Management and e-Learning*, 4(2). <https://doi.org/10.7763/ijeeee.2014.v4.312>
- Medel, R., Guzmán, G., & Ramírez-Guillén, F. (2008). First record of *Discoxylaria myrmecophila* (Ascomycotina, Xylariales) from Veracruz with new reports from Jalisco, Morelos, and Nuevo Leon (Mexico). *Mycotaxon*, 106, 1–6.
- Mohammad, W., Saifurrahman, H., Rausyan Fiqrussalam, J., Sulthoni Umar, A., & Fansyiari

- Austi, D. (2023). PENGARUH JUMLAH VIDEO TERHADAP JUMLAH SUBSCRIBERS DENGAN CONCURRENT VIEWERS SEBAGAI VARIABEL INTERVENING PADA VIRTUAL YOUTUBER. *Triwikrama: Jurnal Multidisiplin Ilmu Sosial*, 01(03), 30–45.
- Mohammad, W., Saifurrahman, H., Rausyan Fiqrussalam, J., Umar Sulthoni, A., & Fansyiari Austi, D. (2023). PENGARUH JUMLAH SUBSCRIBERS DAN JUMLAH PENAYANGAN TERHADAP PENDAPATAN SUPER CHAT PADA VIRTUAL YOUTUBER KOBO KANAERU. *Triwikrama: Jurnal Multidisiplin Ilmu Sosial*, 01(03), 30–45.
- Munday, P. (2015). the Case for Using Duolingo As Part of the Language Classroom Experience. *RIED. Revista Iberoamericana de Educación a Distancia*, 19(1), 83–101. <https://doi.org/10.5944/ried.19.1.14581>
- Nordvall, B. (2021). *Down the Rabbit Hole Hololive Myth, community, and digital geographies*. 1–79.
- Pardayeva, G. (2023). *Revolutionizing Language Education : Teaching Pronunciation with Digital Technology*. 24, 22–26.
- Ryan, R. M., Williams, G. C., Patrick, H., & Deci, E. L. (2009). Self Determination Theory and Physical Activity. In *Hellenic Journal of Psychology* (Vol. 6, pp. 107–124).
- Shortt, M., Tilak, S., Kuznetcova, I., Martens, B., & Akinkuolie, B. (2023). Gamification in mobile-assisted language learning: a systematic review of Duolingo literature from public release of 2012 to early 2020. *Computer Assisted Language Learning*, 36(3), 517–554. <https://doi.org/10.1080/09588221.2021.1933540>
- Sugiyono. (2019). *Metode Penelitian Kuantitatif, Kualitatif dan R&D*. Alfabeta.
- Sweller, J., Ayres, P., & Kalyuga, S. (2011). Intrinsic and Extraneous Cognitive Load. In *Cognitive Load Theory*. https://doi.org/10.1007/978-1-4419-8126-4_5
- Wang, Y., Derakhshan, A., & Zhang, L. J. (2021). Researching and Practicing Positive Psychology in Second/Foreign Language Learning and Teaching: The Past, Current Status and Future Directions. *Frontiers in Psychology*, 12(August). <https://doi.org/10.3389/fpsyg.2021.731721>