

Multisensory Learning Through Anime: A Pathway to Improved English Proficiency for Engineering Students.

¹Vishakha Mandrawadkar, ²Jayanti Shinge, ³Naveenkumar Aigol, ⁴Khezia Olagundi,

⁵Shripoorna Galgali, ⁶Naveen Huggi, ⁷Christina Rebello

¹²³⁴⁷Assistant Professor, KLE Technological University

⁵⁶Sophomore Students, KLE Technological University

¹naveenkumar.aigol@kletech.ac.in ²jayanti_s@kletech.ac.in

³vishakha.mandrawadkar@kletech.ac.in ⁴khezia.olagundi@kletech.ac.in

⁵01fe23bec007@kletech.ac.in ⁶01fe23bci056@kletech.ac.in

⁷christina.rebello@kletech.ac.in

Abstract— Since the 1990s, anime has burgeoned into one of the most widely consumed forms of entertainment media, renowned for its intricate plots and dialogues. This study investigates anime's potential as an innovative tool for English language learning, focusing on the efficacy of two viewing methods: English dubbing and English subtitles. Conducted among freshman engineering students at a Technical University in North Karnataka, the study initially sampled 120 students, of whom 75 preferred visual-verbal learning styles. These 75 students were divided into three groups of 25: one group watched English dubbed anime, another watched English subtitled anime, and the control group received traditional language instruction. Pre- and post-tests were conducted using the Common European Framework of References (CEFR) Self Assessment Grid, along with peer assessments to evaluate spoken interaction and production. Pre-test scores were low across all groups, with averages between 2.2 and 2.6. Post-test results showed that both anime-viewing groups significantly outperformed the control group, with the subtitled anime group achieving the highest improvement. Their scores averaged 5.7 in self-assessment and 5.8 in peer assessment for both spoken interaction and production. The English dubbed group also improved, with averages of 4.4 (self) and 4.6 (peer) in spoken interaction, and 4.6 (self) and 4.8 (peer) in spoken production. The control group showed no improvement, highlighting the limitations of traditional methods. These findings suggest that integrating anime, particularly with subtitles, into language learning curricula offers a dynamic and effective approach to improving English proficiency.

Keywords— Anime; English proficiency; Language acquisition; Multisensory learning; Subtitles; Spoken interaction.

ICTIEE Track: (Technology Enhanced Learning)
ICTIEE Sub-Track: Transforming Education Through
Technology: Best Practices and Case Studies

I. INTRODUCTION

IN the previous years, the popularity of anime, a distinctive series of animated entertainment from Japan, has boomed dramatically. Beyond its captivating storytelling and stunning animation, anime has become a cultural phenomenon with a far-reaching impact. This research involves a unique aspect of anime's influence, focusing on its role in enhancing English language proficiency and contributing to the development of linguistics skills among its audience. As the world becomes more interconnected, language acquisition and proficiency have become crucial aspect of effective communication.

Anime, with its widespread fan-base, has the potential to serve as an important yet an engaging medium for language learning. This research aims to explore the ways in which anime can be used as a tool for education and in improving linguistic skills, specifically in the context of English language proficiency. The analysis of specific linguistic elements within anime, such as dialogue, vocabulary, we seek to identify the exposure to this form of media may contribute to language acquisition and proficiency in linguistics approaches.

Multimedia Learning Theory (MMLT), introduced by Richard Mayer in 1997, is rooted in the principles of Cognitivism and explores how learning is enhanced using multiple media forms. The theory underscores the dual-channel processing of information, where auditory and visual inputs work together to facilitate deeper comprehension. It posits that learners develop more robust mental representations when presented with a combination of words and images, compared to words alone. The principles derived from MMLT have

Vishakha Mandrawadkar
KLE Technological University.
vishakha.mandrawadkar@kletech.ac.in

significant implications for designing educational materials, especially in online and blended learning environments. Effective application of these principles can lead to improved learner engagement and retention by ensuring that multimedia content is structured to facilitate optimal cognitive processing.

A brief analysis of specific linguistic elements with-in anime, we aim to identify how exposure to this form of media may contribute to language acquisition and proficiency. As we navigate in the landscape of linguistic approaches embedded in anime, we seek to uncover the technological ways in which this popular form of entertainment might serve as a catalyst for enhancing language skills and fostering a deeper appreciation for linguistic proficiency. Through this exploration, we aspire to contribute valuable insights to the intersection of popular culture, education, and language development.

II. LITERATURE REVIEW

Given the extensive viewership and substantial popularity of anime, there is a natural inclination to explore the integration of anime as an innovative medium for enhancing language proficiency, specifically in English or any other language. Numerous studies have delved into this phenomenon, including a notable investigation by Leah Joyce R. Corpuz (2020). In this research, eighth-grade students exposed to anime with English subtitles exhibited superior performance in cloze tests compared to a control group using traditional methods.

In Indonesia, Ita Usami Oktapiani, Winda Sari, and Fauzi Ilham (2020) conducted a study that compiled research, theses, and findings from 2008 to 2018, concluding that English subtitled movies effectively enhance students' vocabulary. Another study by Syarif Hidayatullah State University, Jakarta (2023) explored the impact of English subtitled movies on the interest in learning English. The research, involving 100 respondents from social media applications, revealed intentional use of English subtitles by 23% to boost proficiency, 29% using them as a support tool, and the remainder for comfort. The findings indicated a significant increase in interest in learning English through movie subtitles.

Published in the Exllencia journal by Jhonrey C. Uy, Osias Kit T. Rabi, and others (2023), a study focused on Anim Inspired English Learning (AIEL) and its motivational impact. Consistent research results indicated that the immersive narratives and emotional depth of anime inspire heightened enthusiasm in language learners. AIEL was also found effective in enhancing listening skills and introducing learners to different dialects, accents, and vocabulary.

Conducted by Mameri Bouchra of Larbi Ben M'hidi University and others (2018), a study concentrated on improving students' vocabulary through anime. By subjecting students to the political anime "Code Geass: Lelouch of the

Rebellion" and conducting pre and post-tests, researchers observed a significant improvement in students' vocabulary over time. They proposed anime-induced English learning as an innovative approach to language acquisition.

In a study by Chan Yee Han (2019), it is suggested that incorporating anime into classrooms can create a dynamic and effective learning environment. Utilizing activities such as active viewing, repetition, freeze framing, and follow-up discussions, lessons become engaging and productive. The research involved eleven participants selected from a preliminary study, who were invited to enrol in a course titled "Learning Japanese Language and Culture through Anime" at a local public university. The study illustrates how active involvement with anime content provides a more engaging approach to language acquisition when contrasted with conventional methods. In comparison to the traditional method, the 11 students outperformed the others after the introduction to this course.

Considering these findings, it is evident that anime offers a promising avenue for language educators to explore, providing a captivating and effective alternative to conventional language learning approaches. Future research could delve deeper into specific aspects of anime that contribute to language acquisition and explore its application in diverse language learning contexts. As the educational landscape evolves, incorporating innovative methods such as anime-inspired language learning may prove instrumental in fostering a more engaging and effective learning environment.

III. RESEARCH METHODOLOGY

This study employed a quasi-experimental research design to investigate the effectiveness of anime as a multisensory tool for enhancing English language proficiency, specifically focusing on spoken interaction and production.

Learning styles refer to the preferred and distinctive ways in which individuals absorb, process, and retain information. These styles are shaped by a combination of environmental, emotional, sociological, physiological, and psychological factors. Various models have been proposed to categorize learning styles based on how individuals approach tasks, solve problems, and engage with the learning process.

Kolb classifies learners into four types - convergers, divergers, assimilators, and accommodators - based on their preferred methods of learning and problem-solving. Building on Kolb's theory, Honey and Mumford identified four styles - activists, reflectors, theorists, and pragmatists - representing different approaches to learning and problem-solving. Felder Silverman Learning Style model categorizes learners based on four dimensions: active-reflective, sensing-intuitive, visual verbal, and sequential-global. It considers how individuals

prefer to process information and engage in learning activities. Felder (2000) further outlines major characteristics of different learning styles, including active-reflective, sensing-intuitive, visual-verbal, and sequential-global preferences.

The present study was undertaken primarily to study the differences in the learning styles of Freshman Engineering students studying Professional Communication course from different branches of engineering and suggest strategies for meeting diverse needs of students with different learning styles. The study explored the different styles of learning English Language by administering 120 Freshman Engineering students with Index of Learning Styles Questionnaire (1991) developed by Richard M Felder and Barbara A Soloman with 44 questions.

The Active-Reflective (ACT-REF) style distinguishes active learners, who thrive through hands-on engagement and discussions, from reflective learners who prefer contemplative thinking before delving into the material. Active learners often favour collaborative group work, while reflective learners tend to opt for independent study sessions.

In the Sensing-Intuitive (SEN-INT) category, sensing learners gravitate towards factual learning, while intuitive learners excel in exploring possibilities and relationships. Sensors rely on established methods and may be averse to surprises, whereas intuitors showcase innovation and comfort with abstractions. The practical thinking of sensors contrasts with the faster-paced and innovative approach of intuitors. Sensors appreciate real-world connections in courses, while intuitors may find memorization-heavy subjects less engaging.

Visual-Verbal (VIS-VBL) learners, whether visual or verbal, benefit from a dual presentation of information. Visual learners remember best through images and demonstrations, while verbal learners thrive on written and spoken explanations.

Finally, the Sequential-Global (SEQ-GLO) learning style distinguishes between those who comprehend information step by step, building logically from one point to another, and those who learn in leaps, initially absorbing information without clear connections, followed by sudden realizations. Tailoring educational strategies to these diverse learning styles ensures a more inclusive and effective learning experience for all students.

A. Sample

Sample for the study comprised of 120 Freshman Engineering students studying Professional Communication course from different branches of engineering at KLE Technological University, Karnataka. The distribution of sample across four branches of engineering is given in Table I.

TABLE I
SAMPLE FOR STUDY

Sl No	Branch of Engineering	Total Number of students
1	Mechanical	40
2	Civil	40
3	Automation and Robotics	40
4	Bio Technology	40

The questionnaire was circulated amongst 120 students through Google form. After the questionnaire was circulated amongst the students the following styles were remarkably preferred by the engineering students.

The Table II shows the result of the Felder- Solomon styles of Learning results. In terms of Visual-Verbal (V-V) preferences, it is evident that most students in all branches favour this learning style. Civil engineering students stand out with the highest percentage at 58%, followed by Automation & Robotics (38%) and Mechanical engineering (48%).

TABLE II
RESULTS OF FELDER-SOLOMON STYLES OF LEARNING (1991)

Branch of Engineering	Total Participants	A - R	S - I	V-V	S - G
Mechanical	40	23%	18%	48%	13%
Civil	40	15%	20%	58%	8%
Automation and Robotics	40	25%	23%	38%	15%
Bio Technology	40	23%	20%	45%	13%

Regarding Sensing-Intuitive (S-I) preferences, Automation & Robotics students exhibit the highest percentage at 23%, while Mechanical engineering students also show a significant inclination (18%). Conversely, Civil and Biotechnology students have lower percentages in this category.

For the Active-Reflective (A-R) preference, Automation & Robotics students again lead with the highest percentage (25%), closely followed by Mechanical engineering (23%). Conversely, Civil and Biotechnology students exhibit lower percentages in this learning style.

The Sequential-Global (S - G) preference reveals interesting correlations with the Visual-Verbal style. Automation & Robotics students, with the highest percentage of Visual-Verbal learners, also have the highest Sequential-Global preference at 15%.

Observing branch-wise differences, it becomes apparent that each branch has its unique pattern of learning style preferences. Civil engineering students, for instance, display higher preferences for Visual-Verbal and lower for Active-Reflective compared to their counterparts in other branches.

In summary, the overall trends suggest a prevalent preference for Visual-Verbal and Sequential learning styles among students across different branches. Active-Reflective and Sensing-Intuitive preferences appear to be more evenly distributed. These insights can be valuable for educators, enabling them to tailor their teaching methods to better align with the diverse learning style preferences of students in each branch.

75 students out of the sample of 120 students preferred Visual-Verbal styles of learning. These 75 students were further divided into three groups of 25 each. The first group was named Experimental Group 1, Experimental Group 2, and the Control Group.

IV. RESEARCH DESIGN

Anime was selected to cater to the Visual-Verbal learning styles of students because it provides a multisensory approach that effectively engages both visual and verbal cognitive processes. The combination of dynamic visuals and engaging dialogue in anime makes it an ideal tool for Visual learners, who benefit from images and visual presentations, as well as Verbal learners, who excel with written and spoken language (Felder & Soloman, 1991). This multisensory approach is particularly effective in enhancing language acquisition, as it allows students to simultaneously see and hear the language in context, reinforcing their understanding and retention of new vocabulary and phrases. Research has shown that the integration of visual and verbal elements, such as in subtitled anime, significantly improves comprehension and learning outcomes. Additionally, the emotional depth and cultural richness of anime provide an immersive learning experience that motivates students and makes the process of language learning more engaging and effective. Therefore, anime was chosen for its ability to bridge visual and verbal learning, offering a comprehensive approach to language education.

The study was structured to evaluate the effectiveness of anime as a tool for enhancing English language proficiency, particularly focusing on spoken interaction and production. Three groups were established for the study: Experimental Group 1, Experimental Group 2, and the Control Group.

A. Experimental Group 1: Anime with English Dubbed Audio

Pre-Test: The students in Experimental Group 1 first underwent a pre-test using the Common European Framework of References (CEFR) Self-Assessment Grid. This assessment

evaluated their proficiency in spoken interaction and spoken production, establishing a baseline for their language skills.

Intervention Phases: The intervention for this group was carried out in three phases, each phase corresponding to a different level of language proficiency:

1. Basic Level:

- a) The anime movie "Spirited Away" (125 minutes) was used. This phase introduced students to basic vocabulary and sentence structures through the dubbed audio.

2. Intermediate Level:

- a) The anime series "Erased," consisting of 12 episodes (20 minutes each, totalling 240 minutes), was presented. This phase involved more complex language, with a focus on dialogues and emotional expressions.

3. Advanced Level:

- a) The anime series "Pluto," with 8 episodes averaging 50 minutes each (totalling 400 minutes), was used for the final phase. This advanced level engaged students with intricate plots and sophisticated language use, requiring higher levels of comprehension and expression.

Post-Test: After the intervention, students were assessed at two levels:

1. Self-Assessment: Using the CEFR Self-Assessment Grid, students evaluated their own spoken interaction and production skills.
2. Peer Assessment: Students were also evaluated by their peers using the CEFR Peer Assessment Grid, which was adapted from the Self-Assessment Grid.

The post-test included questions such as:

1. How does "Spirited Away" explore the themes of courage and resilience?
2. If you could time travel like Satoru from "Erased," which experience would you alter, relive, or erase?
3. What are your thoughts on the coexistence of humans and robots after watching "Pluto"?

B. Experimental Group 2: Anime with English Dubbed Audio and English Subtitles

Pre-Test: The pre-test for this group also used the CEFR Self-Assessment Grid to measure students' initial proficiency in spoken interaction and production.

Intervention Phases: The intervention mirrored that of Experimental Group 1 but with the addition of English

subtitles, aiming to reinforce language learning by providing both visual and auditory input.

1. Basic Level:

- a) "Spirited Away" (125 minutes) with English subtitles introduced basic language concepts, helping students link spoken and written English.

2. Intermediate Level:

- a) "Erased" (12 episodes, 240 minutes) with subtitles provided a more immersive experience, enabling students to better understand context and nuance.

3. Advanced Level:

- a) "Pluto" (8 episodes, 400 minutes) with subtitles challenged students with complex language and deeper thematic content, promoting advanced comprehension and expression.

Post-Test: Students in this group were assessed similarly to those in Experimental Group 1, with both self-assessment and peer assessment using the CEFR grids. The same reflective questions were used to gauge their understanding and ability to articulate their thoughts in English.

C. Control Group: Traditional Methods

Pre-Test: The Control Group underwent a pre-test using the CEFR Self-Assessment Grid to establish their baseline proficiency in spoken interaction and production.

Intervention: The control group followed a traditional approach to language learning, focusing on the following activities:

Module 1: Spoken Interaction

1. Listening Comprehension and Group Discussion:

- a) Students listened to audio recordings of dialogues or interviews featuring various accents and speech patterns. They then formed small groups to discuss the main ideas and details, fostering interactive discussion.

2. News Report Summarization and Peer Review:

- a) Students listened to English news reports and took notes. They paired up to verbally summarize the reports to their partners, who provided feedback on clarity and key points.

Module 2: Spoken Production

1. Group Discussions:

- a) Regular group discussions were organized on specific topics, encouraging students to express their opinions and ideas in English. Roles such as facilitator,

timekeeper, and note-taker were assigned to ensure active participation.

2. Storytelling Sessions:

- a) Students participated in storytelling sessions where they shared personal experiences, anecdotes, or creative stories in English, helping them build confidence in spoken English and encouraging creativity.

Post-Test: The control group was assessed at two levels:

1. Self-Assessment: Using the CEFR Self-Assessment Grid to evaluate their own spoken interaction and production skills.
2. Peer Assessment: Evaluated by their peers using the CEFR Peer Assessment Grid, which assessed the same language skills.

V. DATA ANALYSIS

The analysis focused on evaluating the effectiveness of anime as a multisensory tool to enhance English language proficiency.

The study involved three groups of students:

1. Experimental Group 1: Exposed to anime with English dubbed audio.
2. Experimental Group 2: Exposed to anime with English dubbed audio and English subtitles.
3. Control Group: Taught using traditional language learning methods.

Each group underwent a pre-test (self-assessed) to gauge their initial proficiency levels, followed by a post-test that included both self-assessment and peer assessment. The assessments measured two key aspects: Spoken Interaction and Spoken Production, using the CEFR rubric.

A. Pre-Test Analysis

The pre-test scores across all three groups were low, reflecting the baseline proficiency of the students prior to any intervention.

1. Experimental Group 1: The average pre-test scores were 2.4 for Spoken Interaction and 2.6 for Spoken Production. These scores indicated that students had a basic understanding of English but struggled with interaction and production tasks.
2. Experimental Group 2: The pre-test scores were similar, with averages of 2.4 for Spoken Interaction and 2.6 for Spoken Production. This group also started with a low level of proficiency.
3. Control Group: The control group had slightly lower pre-test scores, with averages of 2.2 for Spoken

Interaction and 2.4 for Spoken Production, indicating that they too were at a basic proficiency level.

B. Post-Test Analysis

After the interventions, the post-test results revealed significant improvements in the experimental groups, while the control group showed no notable improvement.

1. Experimental Group 1:

- a) Spoken Interaction: The average self-assessed post test score increased to 4.4, with a peer-assessed score of 4.6. This demonstrated a notable improvement in the ability to engage in spoken interactions.
- b) Spoken Production: The average self-assessed post test score rose to 4.6, with a peer-assessed score of 4.8, indicating enhanced proficiency in producing spoken English.

2. Experimental Group 2:

- a) Spoken Interaction: The average self-assessed post-test score surged to 5.7, with a peer-assessed score of 5.8. This group showed the highest level of improvement, suggesting that the combination of dubbed audio and subtitles had a powerful effect on their ability to interact in English.
- b) Spoken Production: The average self-assessed post test score also reached 5.7, with a peer-assessed score of 5.8, reflecting significant gains in the ability to produce spoken English fluently and accurately.

3. Control Group:

- a) Spoken Interaction: The average post-test scores remained unchanged at 2.2 for both self-assessment and peer assessment, indicating no improvement.
- b) Spoken Production: Similarly, the post-test scores remained static at 2.4 for both self-assessment and peer assessment, demonstrating that traditional methods did not contribute to any noticeable improvement in spoken language skills.

VI. RESULTS AND DISCUSSIONS

The results highlighted the clear advantages of using anime as a multisensory tool for improving English language proficiency, particularly when subtitles were used alongside audio.

A. Spoken Interaction:

1. Subtitled Anime is Highly Effective:
Experimental Group 2, which used anime with

1. Experimental Group 1 showed significant improvement, with the average score increasing from 2.4 to 4.4 in self-assessment, and 4.6 in peer assessment. This improvement reflects the effectiveness of anime with dubbed audio in enhancing students' interactive language skills.
2. Experimental Group 2 demonstrated the greatest improvement, with scores rising from 2.4 to 5.7 in self assessment, and 5.8 in peer assessment. The use of subtitles provided a crucial additional layer of support, helping students better understand and engage in spoken interaction.
3. Control Group showed no improvement, with average scores remaining at 2.2, indicating that traditional teaching methods did not effectively enhance students' spoken interaction skills.

B. Spoken Production:

1. Experimental Group 1 also improved significantly in spoken production, with average scores rising from 2.6 to 4.6 in self-assessment, and 4.8 in peer assessment. This reflects increased confidence and ability to produce spoken English after exposure to dubbed anime.
2. Experimental Group 2 achieved the highest gains, with average scores increasing from 2.6 to 5.7 in self assessment, and 5.8 in peer assessment. The subtitles likely played a key role in helping students develop their ability to produce more complex and accurate spoken language.
3. Control Group again showed no improvement, with scores remaining at 2.4, highlighting the ineffectiveness of traditional methods in enhancing spoken production skills.

CONCLUSIONS

The study clearly demonstrated that using anime, particularly with subtitles, significantly enhances English language proficiency, while traditional methods fail to achieve similar results.

A. Key Findings

both dubbed audio and subtitles, showed the most substantial improvement, demonstrating the power of combining visual and auditory learning

tools to improve language proficiency.

2. Dubbed Anime Alone Also Effective: Experimental Group 1, which used only dubbed anime, also showed significant improvement, though less pronounced than Group 2, indicating that even without subtitles, anime is a valuable tool for language learning.
3. Traditional Methods Show No Improvement: The control group's lack of progress underscores the limitations of traditional teaching methods in fostering spoken language skills.

B. Recommendations

1. Incorporate Subtitled Multimedia Content: Educators should consider integrating subtitled anime and similar multimedia resources into language curricula to maximize student engagement and language acquisition.
2. Utilize Peer Assessment as a Tool: Incorporating peer assessment into the learning process can provide additional motivation and feedback, helping students refine their language skills and gain confidence.

C. Future Scope of the Study

The future scope of this study includes expanding the application of anime-based learning to diverse cultural and linguistic contexts, exploring its efficacy in enhancing additional language skills such as listening comprehension, vocabulary building, and writing. Longitudinal studies could be conducted to evaluate the long-term retention and practical application of language skills acquired through anime. By addressing these areas, the study can contribute significantly to the evolving landscape of multimedia-assisted language education.

and syntactic complexity. *International Journal of Novel Research in Education and Learning*, 7(5), 1-13. Available at www.noveltyjournals.com

- Felder, R. M., & Soloman, B. A. (1991). Learning styles and strategies. North Carolina State University. Retrieved from https://www.ncsu.edu/felder-public/Learning_Styles.html
- Han, C. Y. (2017). The use of anime as a teaching tool in a Japanese as a foreign language classroom. Faculty of Languages and Linguistics, University of Malaya.
- Khoirunnisa, N. (2023). Indonesian English foreign language learners' experience on using English subtitles for increasing interest to learn English. Department of English Education, Faculty of Tarbiya and Teaching Sciences, Syarif Hidayatullah State Islamic University.
- Mammeri, B. (n.d.). Boosting foreign language vocabulary learning through "anime": The case of second-year students of English, Larbi Ben M'hidi University.
- Oktapiani, I. U., Sari, W., Humaira, Winda, Bafadal, F., Ilham, I., & Irwandi, I. (2023). Vocabulary learning through English subtitled movie. *Seminar Nasional Paedagogia*, 3, 44. Universitas Muhammadiyah Mataram, Mataram, Indonesia.
- Uy, J., Kilag, O. K. T., Poloyapoy, K. B. M., Balicoco, J. R. M., & Poloyapoy, B. N. M. (2023). Anime-inspired English learning: A unique approach. *Excellencia: International Multi-Disciplinary Journal of Education*, 1(4). ISSN 2994-9521.
- Washington State University. (n.d.). Multimedia Learning Theory. In *Theoretical Models for Teaching and Research*. Retrieved December 5, 2024, from <https://opentext.wsu.edu/theoreticalmodelsforteachingandresearch/chapter/multimedia-learning-theory/>

REFERENCES

- Agustin, Z., Akbarjono, A., & Utami, V. (2020). The influence of English subtitled cartoon videos in teaching listening ability: A quasi-experimental study at the eighth grade of SMPN 05 Bengkulu in academic year 2021/2022. *International Journal of Novel Research in Education and Learning*, 7(5), 1-13.
- Corpuz, L. J. R. (2020). Anime with English subtitles: Tool in expanding second language learners' vocabulary