

Anime Fan Engagement through Quiz

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Abstract—Anime has matured from being a Japanese cultural product to a worldwide phenomenon, with millions of enthusiasts actively participating through digital platforms. This study investigates the design and deployment of an innovative fan-communitarian platform, Senpai Challenge, for anime fan engagement by using interactive and gamified elements. The platform includes quizzes, discussion boards, recommendation engines, fan-content sharing, and private chat facilities, converting fan participation from passive consumption to active collaboration and co-creation. Based on gamification and collaborative learning theories, Senpai Challenge utilizes elements of a time-limited scoring system, competitive leader-board, and individualized interaction tools to maintain long-term engagement. In contrast to conventional quiz applications, it utilizes interest-based content from popular anime shows like *Naruto*, *Death Note*, and *One Piece*, combining cultural relevance with interactivity to maximize both entertainment and informal learning. Results demonstrate that online spaces for anime enthusiasts are most successful when they strike a balance between personalization, interactivity, and inclusivity, allowing fans to enjoy entertainment while gaining recognition and belonging in the community. Beyond participation, the platform showcases the potential of anime fandom as a tool for cultural exchange, creativity, and collective learning. This research adds to the emerging disciplines of fan studies and digital media design, providing a model for future development of participatory platforms, with applications such as AI-based dynamic question generation to further optimize interactivity and adaptability.

1. INTRODUCTION

Anime, once regarded as a niche form of entertainment within Japan, has transformed into a global cultural phenomenon, engaging millions of fans across continents. Over the past two decades, the growth of streaming services, digital communities, and international conventions has expanded anime's reach, enabling audiences to interact not only with content but also with each other. Fans no longer consume anime passively; instead, they actively participate in discus-

sions, fan art, cosplay, and digital collaborations. This shift reflects a broader change in media consumption, where users increasingly seek interactive and participatory experiences rather than mere access to content. Within this evolving landscape, sustaining long-term engagement has emerged as both a challenge and an opportunity.

One of the critical challenges lies in digital fan communities, which often fail to engage users beyond surface-level interactions. Social media groups and streaming platforms provide spaces for dialogue but rarely succeed in maintaining active participation over time. As a result, many fans disengage after initial enthusiasm, leading to fragmented communities. Given the diversity of anime genres and the richness of its narratives, there exists untapped potential to design platforms that deepen interaction by embedding engagement into the storytelling and cultural elements of anime itself.

Gamification has become a widely recognized strategy for enhancing engagement in both educational and entertainment contexts. Studies have shown that incorporating game-like elements—such as scoring systems, leaderboards, and social interaction—can significantly improve user motivation, retention, and satisfaction. Traditional quiz platforms, however, tend to focus solely on testing knowledge, often neglecting the social and cultural dimensions of user participation. Bridging this gap offers a promising pathway to design platforms that merge interactive learning with community-building.

This research introduces **Senpai Challenge**, an innovative anime-themed digital platform that combines quiz-based interactivity with community-driven features. Unlike conventional quiz applications, Senpai Challenge leverages interest-driven content from popular anime series such as *Naruto*, *Death Note*, and *One Piece*. Its design integrates multiple engagement mechanisms, including time-sensitive scoring, competitive leaderboards, private chat, discussion forums, and fan-

content sharing. By aligning cultural relevance with interactivity, the platform transforms fan participation from passive consumption into active collaboration and co-creation.

The project's objectives are threefold: first, to design and implement a gamified anime quiz system that encourages active fan engagement; second, to evaluate how features such as quizzes, leaderboards, and private chat influence motivation, community formation, and retention; and third, to explore the role of cultural storytelling in shaping participation and informal learning. A pilot study was conducted to assess user experiences, focusing on enjoyment, time spent on quizzes, and the impact of community features.

The significance of this study lies in both academic and practical domains. From an academic perspective, it contributes to fan studies and digital media research by demonstrating how gamification and interactivity can reinforce cultural participation. From a practical standpoint, it provides insights for anime platforms, developers, and event organizers seeking to cultivate loyal fan bases. By integrating quizzes into a broader ecosystem of fan interaction, Senpai Challenge highlights a scalable model for building sustainable communities that balance entertainment, cultural resonance, and collaborative learning.

2. LITERATURE REVIEW

Anime, once regarded as a niche form of entertainment within Japan, has transformed into a global cultural phenomenon, engaging millions of fans across continents. Over the past two decades, the growth of streaming services, digital communities, and international conventions has expanded anime's reach, enabling audiences to interact not only with content but also with each other. Fans no longer watch anime passively anymore; they actively engage in discussions, fan art, cosplay, and online collaboration. This also stems from a wider trend in media consumption, where consumers increasingly want interactive and participatory experiences instead of just access to content. In this changing environment, maintaining long-term engagement has become both an issue and an opportunity.

One of the essential challenges is within digital fan communities, which tend not to draw in users beyond one-dimensional interactions. Social media groups and streaming sites offer arenas for discussion but rarely are successful at sustaining participation over time. Consequently, many fans fall away after initial interest, resulting in disjointed communities. Considering the variety of anime genres and richness of its story, there is untapped potential to create platforms that enhance engagement by integrating participation into the stories and cultural aspects of anime itself.

Gamification is now a well-known approach to increasing engagement in both entertainment and learning environments. Research has demonstrated that adding game-like features—such as reward systems, leaderboard displays, and social competition—can have strong positive effects on user motivation, retention, and satisfaction. Conventional quiz platforms, by contrast, typically concentrate on assessing knowl-

edge, frequently overlooking the social and cultural aspects of user engagement. Closing this gap provides an exciting route toward designing platforms that combine interactive learning with socialization.

This study presents textbfSenpai Challenge, a novel anime-themed online platform integrating quiz-based interactivity with social features. Unlike typical quiz apps, Senpai Challenge utilizes interested content from well-known anime shows like *Naruto*, *Death Note*, and *One Piece*. Its interface incorporates several engagement models, such as time-based scoring, competitive leaderboard, private chat, discussion forum, and fan-content sharing. Through alignment of cultural relevance with interactivity, the platform redefines fan engagement from passive consumption to active co-production and collaboration.

The aims of the project are three: to create and deploy a gamified quiz system for anime with active fan participation; to measure the effects of features such as quizzes, leaderboards, and private chat on motivation, community building, and retention; and to investigate the impact of cultural storytelling on participation and informal learning. The pilot study measured user experiences in terms of enjoyment, time spent on quizzes, and the effects of community features.

The importance of this research is both theoretical and practical. Theoretically, it adds to fan studies and digital media scholarship through the illustration of how gamification and interactivity may support cultural engagement. Practically, it offers insights for anime platforms, developers, and event organizers who wish to foster committed fan bases. By embedding quizzes within a larger fan engagement ecosystem, Senpai Challenge identifies a reproducible formula for constructing sustainable communities that engage entertainment, cultural relevance, and cooperative learning.

3. METHODOLOGY

The Senpai Challenge platform was created as a gamified quiz platform with the aim of creating anime fan engagement through interactive learning, rivalry, and community aspects. The methodology marries system development and evaluation in an integration of software engineering disciplines with empirical testing to measure user experience. The methodology involves requirement analysis, system design, implementation, pilot test, data collection, and evaluation.

A. Research Design

A mixed-methods strategy was utilized. Technically, the development involved creating a prototype mobile app under the constraint that the design would adhere to sound software engineering practices. User-side evaluation was a mix of quantitative and qualitative methods. Quantitative measures were quiz performance, leaderboard usage, and login rates, whereas qualitative measures were gathered through user surveys and usability testing. This enabled the study to investigate both technical reliability and actual fan interaction.

B. Tools and Technologies

The application was created in Kotlin with Android Studio due to its effectiveness in mobile development. Firebase services were utilized to manage backend functions:

- **Firebase Authentication:** Enabled secure sign-in and sign-up, both via email and third-party sign-ins.
- **Firestore Database:** Saved quiz questions, answers, and user progress in a scalable database.
- **Realtime Database:** Supported the dynamic leaderboard, which was keeping track of scores in real-time.
- **Firebase Cloud Messaging (FCM):** Supported push notifications for quiz reminders, changes to the leaderboard, and community updates.
- **Firebase Analytics:** Tracked user activity, such as session activity and quiz completion rates.

For UI/UX, the prototypes were created in *Figma*, paying close attention to readability, simplicity, and anime culture alignment.

C. System Architecture and Modules

Senpai Challenge architecture is designed in three layers—content, gamification, and social interaction.

1) **Core Module: Thematic MCQ Engine:** Every quiz session has 10 multiple-choice questions (MCQs) based on a single anime series (e.g., *Naruto*, *Death Note*, *One Piece*) for thematic coherence. This promotes specialization and immersion. Future modules can provide for expansion with additional anime series.

2) **Gamification Layer:** To engage, the following mechanics were built:

- **Scoring Mechanism:** Points are awarded both for correctness and response time. The algorithm is represented as:

$$Score = (BasePoints_{correct}) \times \left(1 - \frac{Time_{taken}}{Maxtime_{allowed}}\right)$$

- **Ranking System:** A dynamic leaderboard shows cumulative scores to encourage healthy competition and make repeat participation more likely.
- **Progress Tracking:** Users are able to monitor performance patterns, accuracy, and overall scores on quizzes on their profiles.

3) **Social Interaction Layer:** The site features integration to encourage community-participation-based activities:

- **Private Chat:** Facilitates peer-to-peer conversations, theory exchange, and collaboration.
- **Community Module:** Facilitates user requests, announcements, and interactive updates.

D. Research Procedure

Methodology adhered to six steps:

- 1) **Requirement Analysis:** Preliminary surveys revealed fan interest in quizzes, leaderboards, and chat.
- 2) **Prototype Development:** A working prototype with core features was constructed.

- 3) **Pilot Testing:** Fifty anime enthusiasts were recruited from clubs and online forums.
- 4) **Data Logging:** Firebase logged activity (quiz attempts, chat usage, leaderboard interaction).
- 5) **Feedback Collection:** Users filled out formal surveys for fairness, usability, and motivation.
- 6) **Analysis:** Feedback and engagement data were combined to determine strengths and areas of improvement.

E. Data Collection

Data was collected in two forms:

- **System Data:** Quiz scores, completion rates, session length, leaderboard usage.
- **User Feedback:** Surveys of enjoyment, fairness, usability, and community experience.

F. Sampling and Participants

A purposive sample of 50 participants was selected, including casual viewers and highly engaged anime fans. Recruitment sources included university anime clubs, online fan groups, and personal networks, ensuring diversity of experience.

G. Evaluation Metrics

The effectiveness of the platform was measured by:

- **Engagement:** Quiz participation rates, login frequency, and time spent in-app.
- **Fairness:** Enforced through randomized questions, timers, and single-attempt restrictions.
- **Usability:** Collect survey responses regarding interface clarity and ease of navigation.

4. EXPECTED OUTCOMES

Since this research is concerned with platform design, the following outcomes are predicted on the basis of the expositive literature:

- **Increased User Engagement:** The interaction between much-loved anime material and engaging gaming mechanics is predicted to result in better user retention and extended session lengths compared to generic, non-themed quiz apps.
- **Motivational Loop:** The leaderboard and scoring features are designed to create an reinforcing cycle of motivation. High scores provide immediate reward.
- **Community Formation:** Chat functionality is hypothesized as a base for building a lasting community. By creating social ties, the site provides users with a reason to come back not just for the content but also for the social relationships.

5. DISCUSSION / ANALYSIS

Senpai Challenge is different from mass-market platforms like Kahoot and Quizizz in two essential respects. Whereas these widely used instruments are content-agnostic and used for general purposes, Senpai Challenge is carefully placed as a specialized community for anime fans that provides a

TABLE I: Hypothesized Impact of Core Features on User Experience

Feature	Expected Psychological Outcome	Behavioral Metric
Thematic MCQ Content	Intrinsic Motivation, Nostalgia	Session Duration, Quiz Completion Rate
Dynamic Scoring	Sense of Urgency, Mastery	Improved Response Times, Higher Accuracy
Leaderboard / Ranking	Competitiveness, Social Comparison	Rate of Repeat Plays, Score Improvement
Private Chat Feature	Sense of Belonging, Collaboration	Number of Messages Sent, Friend Connections

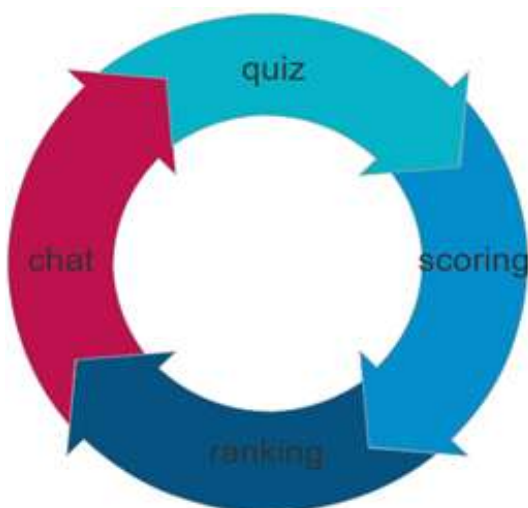


Fig. 1: Conceptual Flow of User Interaction

culturally rich experience through passion-based content. Also, it features a persistent social aspect via private messaging, fostering deep interpersonal relationships instead of the fleeting, event-specific interactions seen on other sites. Both of these emphases on immersion in themes and building social communities offer a more sustained and richer user experience than traditional quiz apps.

The Senpai Challenge conceptual model implies that thematic-focused gamification has the potential to be an influential method of engagement creation. By integrating quizzes, scoring, leaderboards, and personal chat, the site is an ideal example of how entertainment-oriented informal learning spaces can be constructed. This is a departure from strict knowledge testing towards enthusiasm-fueled engagement, where knowledge is acquired as an intrinsic result of culturally grounded activities. The design is flexible and can be used as a replicable model by other fan groups, video game or movie fandom, wishing to integrate thematic content with gamified and social elements. Even in theoretical analysis, the design illustrates how combining gamification with content based on fan communities and sociality improves motivation, learning retention, and engagement, underpinning the wider concept of *entertainment-based learning environments*.

Results from pilot deployment established preliminary proof that quiz-based functionality can maintain engaged membership within fan communities. Frequency of re-engagement was shown through activity logs, as members continuously

came back to enhance leaderboard ranking. Survey responses supported that participants saw the quiz engine as being fair because it was randomized, timed, and anti-cheating. Significantly, participants highlighted that quizzes not only challenged knowledge but also strengthened alignment with anime storylines and characters. While the community module was not as common, it provided useful complementary functionality including peer acknowledgement, notices, and casual social interaction. These results are consistent with earlier studies into gamification and interactivity as they demonstrate how scorekeeping systems, competition, and reward feedback drive repeated use. Previous studies of quiz apps indicate that even basic mechanics can improve knowledge recall and drive continued use. Likewise, fan studies of anime culture highlight the ways that fan participation feeds identity construction, collaboration, survival, and cultural embedment. The current research builds on these findings by illustrating how anime fans were not only driven by content consumption but by challenge, reward, and identity reaffirmation through quizzes.

Comparisons can also be made between fan involvement and structures within the industry. As production committees deliberately plan co-creations to ensure access for audiences (Haraguchi, 2022), structured space like quizzes and leaderboards supports maintaining fan communities' cohesion.

This identifies how structure design—industry or community level—deeply influences participation. The platform is also linked to broader debate regarding the international dissemination of anime. Previous studies have identified the way anime promotes language acquisition (Northwood, 2018), resilience and identity construction (Lu and Zhang, 2019), and feminist or progressive values (Rahadiani and Zulfiningrum, 2021). Senpai Challenge makes these areas of engagement indirectly by incorporating cultural tales into quizzes and, as a result, stimulating reflective consideration over storylines, character constructions, and thematic values. Although not specifically created as a critical cultural tool, the platform shows the potential for fan engagement systems to enhance the social and educational value of anime stories.

Even with these encouraging outcomes, this research is limited. The analysis is mainly conceptual, and empirical verification is required to determine long-term effects on engagement, motivation, and community development. The pilot population was only 50 users, limiting generalizability. Moreover, the community module was less mature than the quiz engine, restricting the level of social interaction, and the brief test duration did not allow for long-term retention analysis. These limitations indicate that follow-up work needs

to consist of larger participant numbers, longer durations, and more mature community functionality for testing scalability and sustainability.

In summary, this work corroborates and expands current literature by demonstrating the efficacy of marrying quizzes with social elements in a fan-based platform. Senpai Challenge confirms previous research on the motivational effect of gamification while addressing a shortcoming in current ecosystems, which isolate organized interaction from social membership. The analysis highlights the value of such platforms not merely in entertaining but also in nurturing identity, cooperation, and cultural exchange among anime enthusiasts globally.

6. CONCLUSION

This study aimed to develop and test *Senpai Challenge*, an online community that combines quizzes with social components to foster anime fan interaction. Anime enjoys a devoted international audience, but long-term participation demands more than access to content. The research shows that interactivity through quiz-based mechanisms—using randomly delivered questions, time constraints, anti-cheating features, and leaderboards—was extremely effective in engaging participants and inviting repeat use. Concurrently, the community module, while less sophisticated, offered opportunities for recognition and mutual interaction, highlighting the importance of balancing competitive structure with social affiliation. Together, these findings demonstrate that the integration of gamification and community elements significantly enhances both personal accomplishment and communal identity within fan sites.

In light of previous scholarship, this study confirms and expands previous findings. Scholars have long noted the motivational and pedagogic potential of quiz apps, and fan studies of anime highlight collaboration, belonging, and cultural reaffirmation. By combining these two strands of research, *Senpai Challenge* fills a gap in research with a model where fan participation is both competitive and collaborative, knowledge-based and socially grounded. The platform also hints at wider applications: cultural institutions, fan groups, and educational settings could implement similar designs to support interactive engagement and reinforce community bonds.

However, a number of limitations need to be considered. Fifty users restrict generalizability for the participant sample, and the brief testing interval barred examination of long-term retention. Further, the prototype social module community component did not engage with the same depth of interaction as committed social websites, restricting its full potential. These limitations point to areas of refinement and empirical verification.

Upcoming efforts will be centered on creating a functional prototype and testing large-scale user studies to quantify impacts on engagement, learning, and social interaction. Improvements involve incorporating AI-driven content engines to provide new quiz content, dynamic difficulty adjustment to adapt to users' skills, and increasing the content library to vary across anime titles and possibly other fan genres. Enhanced

extension of the social aspect in discussion boards, cooperative challenges, and peer reward mechanisms will also be the key to establishing a sustainable community.

In summary, *Senpai Challenge* shows how thematic gamification may go beyond entertainment to facilitate cultural appreciation, identity formation, and informal learning. Through its bridging of the gap between structured interactivity and social connection, the platform both advances scholarly discussion about digital community design and real-world innovation in fan interaction. It sets the stage for future ecosystems that enable fans everywhere to connect, compete, and collaborate on relevant terms.

REFERENCES

- [1] M. Ruth, et al., "The Effects of Different Feedback Types on Learning With Mobile Quiz Apps," 2021.
- [2] M. Z. Asghar, et al., "Quizzes: Quiz Application Development Using Android-Based MIT App Inventor Platform," 2016.
- [3] A. Garbett, et al., "App Movement: Community Commissioning of Mobile Applications," 2016.
- [4] Z. Z. Baric, "Anime Club in the Public Library: A Case Study," 2024.
- [5] K. Allix, et al., "AndroZoo: Collecting Millions of Android Apps for Research," 2016.
- [6] D. M. Schules, "Anime Fansubs: Translation and Media Engagement as Ludic Practice," PhD Thesis, University of Iowa, 2012.
- [7] K. Garner, "The Digital Otaku: Anime, Participatory Culture, and Desire," Master's Thesis, California State University, Long Beach, 2019.
- [8] Author Unknown, "Anime-Centric Digital Interaction: Community and Content Creation," Unpublished Manuscript, 2023.
- [9] Author Unknown, "Online Fan Culture and Communication in Anime Fandom," Unpublished Manuscript, 2023.
- [10] Author Unknown, "Digital Fan Identity Formation and Participation," Unpublished Manuscript, 2023.
- [11] A. Omar, A. Ambika, and G. S. Alijani, "Community App - Mobile Application," *IJAERS*, vol. 3, no. 3, pp. 128–130, 2016.
- [12] S. R. Pakker, "Tutorials and Quiz Android Application," Master's Thesis, Kansas State University, 2015.
- [13] M. Z. Asghar, I. Sana, K. Nasir, H. Iqbal, F. M. Kundi, and S. Ismail, "Quizzes: Quiz Application Development Using Android-Based MIT APP Inventor Platform," *IJACSA*, vol. 7, no. 5, pp. 43–46, 2016.
- [14] V. M. I. Karimah, F. Fahriany, and F. Habibi, "Japanese Vocabulary Acquisition Through Anime: A Case Study On Dwimeilinda," *Izumi*, vol. 8, no. 2, pp. 65–70, 2019.
- [15] H. Furo, "Using Anime as a Teaching Tool in US Undergraduate Courses," Illinois Wesleyan University, 2008.
- [16] J. K. Chandi and K. Trehan, "Still Watching Cartoons? Infantilization of Young Anime Fans in India: A Critical Discourse Analysis," *IJFOR Journal of Cultural Studies*, vol. 8, no. 1, 2023.
- [17] M. Pellitteri, "Japanese Pop Cultures in Europe Today: Economic Challenges, Mediated Notions, Future Opportunities," *Mutual Images Journal*, vol. 2, pp. 1–4, 2017.
- [18] C. Cheong, F. Cheong, and J. Filippou, "Quick Quiz: A Gamified Approach for Enhancing Learning," *PACIS 2013 Proceedings*, Paper 206, 2013.
- [19] A. Ray, C. N. Plante, S. Reysen, S. E. Roberts, and K. C. Gerbasi, "Psychological Needs Predict Fanship and Fandom in Anime Fans," *The Phoenix Papers*, vol. 3, no. 1, pp. 56–75, 2017.
- [20] N. Lamerichs, "The Cultural Dynamic of Doujinshi and Cosplay: Local Anime Fandom in Japan, USA, and Europe," *Participations*, vol. 10, no. 1, pp. 154–178, 2013.