"Phonetics to the Rescue": A Gamified Approach to Learning Phonetics

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ABSTRACT

"Phonetics to the Rescue" is a game-changer for mastering one of linguistics' toughest subjects. Phonetics can intimidate even the most motivated students as its intricate sound system, unfamiliar symbols, and scarce quality resources often make it feel like a maze. Yet, mastering the International Phonetic Alphabet (IPA) is vital for accurate pronunciation and confident communication. This web-based educational game turns that challenge into an adventure. Players step into the shoes of a daring protagonist on a mission to escape, but every door forward is locked by a phonetics puzzle. From matching IPA symbols to recognising tricky sounds and transcribing speech, each challenge blends interactive audio recognition with fast-paced problem-solving. The innovation lies in its fusion of rigorous phonetics practice with immersive, narrative-driven gameplay. By making learning feel like play, it breaks down anxiety, sustains engagement, and makes even the most complex concepts approachable. "Phonetics to the Rescue" is flexible for both classroom and independent use, adapting to different skill levels while keeping learners hooked. The outcome is more than just improved grades, as students gain sharper listening skills, better pronunciation, and lasting phonetic confidence. Fun, focused, and future-ready, this invention makes phonetics a subject students want to master.

Keywords: phonetics, pronunciation, IPA, game, gamification

INTRODUCTION

Phonetics is a branch of linguistics that studies how speech sounds are produced, heard, and perceived. It plays a vital role in understanding language pronunciation, in which in turn contributes to improving and enhancing language proficiency. This is supported by Pasaribu and Al Khalili (2024) who stated that an understanding on phonetics is crucial in enhancing language skills, whether in daily conversation or in academic field like literature, linguistics, and communication. In this regard, the International Phonetic Alphabet (IPA) serves as a standardised system for representing speech sounds.

Past studies have shown that integrating gamification concepts on learning can enhance learners' skills and understanding. Daniel and Suleiman (2023) explained that games can serve as effective teaching tools in the classroom, helping students to grasp complex concepts and terminology in a specific subjects. Moreover, Bennis and Amali, (2019) stated that, over the past decade, Game-based Learning (GBL) has been crucial in enhancing learner motivation by incorporating gamification in the learning process. Similarly, GBL is used to engage students by making the learning process more enjoyable and fun (Zaranis & Alexandraki, 2021)

The project titled "Phonetics to the Rescue" is a web-based game designed to focus on phonetics, particularly the use of the International Phonetics Alphabet (IPA). Inspired by escape room games, it applies gamification principles such as challenges and progression-based tasks, paired with an engaging storyline to immerse players and sustain their interest. To advance through levels and successfully escape, players must solve phonetics-related questions. By blending education and entertainment, the game creates an engaging and effective learning experience.

Problem Statement

Learning phonetics poses significant challenges for many students due to factors such as the complexity of the phonetic system, the limited availability of high-quality and interactive learning resources, and the presence of unfamiliar sounds that may not exist in their native language (Tolba et al., 2024). Although traditional classroom-based instruction can provide foundational knowledge, it often relies on repetitive drills and static materials, which may not fully engage learners or sustain their motivation. As a result, students may struggle to retain concepts or develop practical skills in phonetic transcription.

Integrating gamification into phonetics learning can address these issues by providing an interactive, rewarding, and motivating environment. Through gameplay elements such as challenges, rewards, and progress tracking, students can be encouraged to engage more actively with phonetic concepts and improve their learning experience.

Objectives

1. To create an engaging phonetics learning platform that integrates gamification elements.
2. To design the game's features, interface, and content to support the learning of IPA symbols in an interactive and user-friendly way.

PRODUCT DESCRIPTION & METHODOLOGY

The game presents an immersive experience for players as they assume the role of a linguist stranded on an island, tasked with solving phonetic puzzles to secure escape. Each challenge is designed to reinforce knowledge of the International Phonetic Alphabet (IPA), including symbol recognition, sound-symbol correspondence, and articulatory feature identification. This integration of gameplay with linguistic content aims at transforming conventional phonetics learning, which is often perceived as abstract and technical, in a dynamic and exploratory process that motivates students' engagement and retention.

Structurally, the game is divided into five (5) levels of mission-based puzzles that gradually increase in complexity. Each level introduces new phonetic concepts through interactive exercises such as matching symbols to sounds, classifying consonant and vowel features, and decoding phonetic transcriptions. Players earn "virtual tools" such as a rope, key, or flashlight to be carried in a backpack upon successful completion of tasks, which are later used to unlock higher levels. This backpack mechanism provides and intrinsic reward system that induces a sense of adventure while reinforcing correct learning outcomes. The final stage requires students to decode a full phonetic transcription and convert it into standard English orthography, allowing them to synthesise and apply all acquired knowledge.

Upon completion of the prototype, the game underwent a feedback and testing phase. Feedback was solicited from a small group of intended users, including peers and students, to evaluate usability, clarity of instructions, difficulty level, and overall engagement. Based on this feedback, several refinements were made, including the simplification of instructions and the adjustment of challenge sequencing to balance difficulty across the game. This iterative process ensured that the definitive version was both accessible and pedagogically sound. The final phase involved the consolidation and publication of the game. Once refinements were completed, the escape room was published on Genially and made accessible to participants for classroom and research purposes. The published version (Figure 1) was subsequently evaluated for its educational value, interactivity, and overall effectiveness in supporting phonetics learning. This phase also ensured that the game could be seamlessly integrated into instructional practice and potentially replicated for similar language learning contexts.

Designed for tertiary-level linguistics and language education contexts, "Phonetics to the Rescue!" serves both instructional and research purposes. It can be integrated into classroom-based pronunciation modules, used as a supplementary self-learning tool, or deployed in studies examining the effects of gamified learning on phonetic competence and motivation. Through its combination of visual design, interactivity, and immediate feedback, the game aligns with constructivist principles of learning, promoting active engagement, and meaningful

knowledge conservation. As such it offers a pedagogically grounded and innovative approach to teaching phonetics that supports both formative assessments and learner autonomy.

Figure 1 Phonetics to the Rescue's published version

Potential Findings and Commercialisation

This project is expected to demonstrate that gamification can serve as an effective pedagogical tool in the teaching and learning of phonetics. By integrating phonological concepts into a quiz-based escape room format, the game is anticipated to enhance learner engagement, reduce anxiety associated with complex linguistic content, and improve knowledge retention. It is also likely to illustrate the value of narrative-driven design (Figure 2) in supporting active learning, thereby contributing to the growing body of research on game-based language learning.

Figure 2 Narrative flow of the phonetics-based escape room game

From a commercialisation perspective, the product holds potential for broader application beyond its initial research scope. Educational institutions may adopt the game as a supplementary tool in phonetics or linguistics courses, while individual learners could utilise it as a self-directed study resource. The platform can also be expanded into a series of gamified modules covering different areas of linguistics, thereby increasing its

marketability. With further refinement and validation, the product may be positioned as a digital learning package for language centres, universities, and online learning platforms, creating opportunities for licensing, collaboration, and scalability in the educational technology sector.

NOVELTY AND RECOMMENDATIONS

The novelty of this project lies in its application of a gamified escape room format to the teaching of phonetics, a domain that is often perceived as abstract and challenging. By embedding phonetic concepts within a storyline and interactive tasks, the game provides learners with an alternative learning pathway that combines both engagement and educational value. This approach contributes to the growing literature on digital game-based learning, particularly within the field of linguistics, where such applications remain relatively limited.

Despite these strengths, user feedback highlighted certain limitations. Several participants noted that the absence of an introductory section on basic phonetic concepts, such as the International Phonetic Alphabet (IPA) symbols, made the game challenging for beginners. This indicates that the game may be better suited for learners with some prior exposure to phonetics. Additionally, suggestions were made to include features such as a scoreboard and a "lives" system to increase competitiveness and replay value. However, these enhancements were constrained by both the limitations of the Genially basic plan and the project's time frame.

For future iterations, it is recommended that the game be upgraded to Genially's advanced plan to unlock additional features and improve interactivity. Incorporating an introductory module on phonetic concepts would also broaden its accessibility to novice learners. Finally, expanding the game to include motivational elements such as progress tracking, rewards, and adaptive difficulty could further enhance its pedagogical effectiveness and overall user experience.

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