Title	確率的及びスキル型ゲームの難易度に焦点を当てたエンターテインメント性の向上
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Abstract

The implementation of luck and chance in games serves to create a dynamic and unpredictable experience, ensuring that outcomes are not solely determined by skill. This element of randomness can balance the playing field, giving novice players opportunities to succeed against more experienced opponents, thereby maintaining engagement and excitement. By integrating luck and chance, games can mimic the unpredictability of real-life scenarios, compelling players to adapt their strategies continuously and enhancing the gameplay's overall immersive and entertaining quality. However, several monetization strategies have been introduced, such as gacha systems and loot boxes, which blur the lines between gaming and gambling. These mechanics involve players spending real or in-game currency for a chance to obtain virtual items, often with varying degrees of rarity and value. The randomized nature of these rewards can lead to addictive behaviors, as players are enticed to make repeated purchases in hopes of obtaining desired items. This can result in significant overspending, with some players investing substantial amounts of money without a guaranteed return on their investment. The psychological impact is similar to that of traditional gambling, where the thrill of the potential reward drives continuous spending. This convergence of gaming and gambling has sparked widespread concern and debate, prompting calls for increased regulation and transparency to protect vulnerable players from exploitative practices.

In the realm of gaming, understanding the delineation between chance-based mechanics and gambling practices is crucial, prompting the investigation outlined in this dissertation. This inquiry delves into the nuances that distinguish a game of chance from gambling activities, addressing both conceptual and practical boundaries. Attention is also directed towards the intricacies of gacha games, particularly focusing on the underlying significance of their probability of winning and the pity systems. By exploring the psychology behind these mechanics, this dissertation aims to outline principles for designing an ideal gacha game that balances player engagement with ethical considerations.

The influence of team dynamics on gameplay experience forms the crux in sports and multiplayer games. Examining how team size impacts entertainment value and difficulty levels within games provides valuable insights for game designers seeking to optimize player engagement and challenge with respect to the number of players in said game. We propose a theoretical exploration of pressure within games, contrasting it with the concept of mass in the motion in mind model to explain the difficulty of games with respect to the number of players. By elucidating the essential disparities between these measures, this inquiry contributes to a deeper understanding of psychological dynamics in gaming environments.

Finally, this dissertation ventures into the realm of player emotion, investigating potential links to the motion in mind model. By probing the intersection of cognitive processes and emotional states within gaming contexts, this research seeks to uncover underlying mechanisms driving player experiences. We will be conducting several experiments in the domain of gacha and multiplayer games to definitively establish the connection between players' emotional states and previously hypothesized cognitive measures.

Collectively, the research questions raised from this dissertation form a comprehensive exploration of various facets within the gaming landscape, offering insights into conceptual boundaries, game design principles, team dynamics, psychological constructs, and their interconnections.