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## Original Research Article

# The impact of gamification on user experience: A case study of Duolingo

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**Abstract:** This paper presents an investigation into the influence of gamification on user experience, utilizing a case study approach to examine the application of gamification in the context of Duolingo. Gamification can be defined as the incorporation of game elements with the objective of enhancing user engagement and motivation, thereby facilitating the acquisition of knowledge and the development of skills. In the field of digital learning, gamification has been widely employed in non-game contexts to enhance educational outcomes. Duolingo's language learning platform utilizes gamification elements, including points, badges and leaderboards, to render the learning process more engaging and motivating. It has been demonstrated that the implementation of gamification can effectively enhance users' motivation and enthusiasm for learning. However, the inappropriate utilization of gamification may result in adverse effects, such as stress and anxiety, which could subsequently impact the learning outcomes. This paper presents a summary of the advantages and disadvantages of gamification, along with recommendations for future enhancements.

**Keywords:** Gamification; User experience; Duolingo; Language Learning

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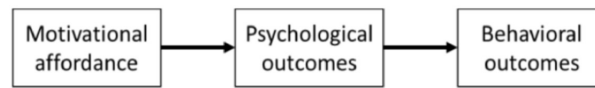
## 1. Introduction

It is of the most extreme significance to memorize an outside dialect, such as English, on the off chance that one is to travel overseas or engage in commerce communication. Within the quickly advancing field of advanced learning, imaginative approaches are always being investigated to progress client engagement and instructive results. One such approach is gamification, which includes the application of diversion components to upgrade inspiration and information procurement, in this manner opening instructive potential. Gamification empowers the improvement of key advanced competencies, counting collaboration through computerized advances, overseeing computerized personalities, programming, locking in citizenship through computerized innovations, sharing through advanced advances, and securing well-being and well-being (Torres-Toukoumidis & Maeöts, 2019). The development and spread of advanced stages, social media, and portable advances have driven a fast multiplication of the marvel of gamification in benefit design (Pasca et al., 2021). This essay will examine two key texts: Krath et al. (2021a) Revealing the theoretical basis of gamification: a systematic review and analysis of theory in research on gamification, serious games and game-based learning and Huynh et al. (2016) Analyzing Gamification of "Duolingo" with Focus on Its Course Structure. Furthermore, Duolingo will serve as a case study to examine the role of games in language learning.

## 2. Understanding gamification

The term *gamification* was to begin with utilized within the computerized media economy division in 2008 (Sanchez et al., 2017). Gamification is defined as the process of enhancing services with motivational affordances in order to evoke game experiences and further behavioral outcomes. Gamification is characterized as the method of upgrading administrations with motivational affordances in arrange to inspire diversion encounters and advance behavioral results. The objective of gamification is to inspire the same mental involvement as that

created by the diversion. **(Figure 1)** In any case of the outcome, the instruments utilized in gamification must be reliable with those utilized in diversions, as outlined within the figure. The figure outlines how motivational instruments can impact mental results, which in turn impact behavioral outcomes (Hamari et al., 2014).



**Figure1. Gamification(Hamari et al., 2014).**

The viable application of gamification in an assortment of situations requires an understanding of the fundamental standards and instruments that drive its victory. The utilization of game-like components in non-game situations is unexpected upon the creation of locks in and motivating encounters for clients over an assortment of social stages and programs. These components are regularly alluded to as amusement mechanics and elements, and they play an essential part in impacting client intuition and improving the by and large involvement. It is therefore of the utmost significance to pick up an understanding of these components and to execute them accurately on the off chance that one is to realize the specified mental and behavioral results that are required for the effective execution of gamification.

The creation of locks in encounters through game usefulness in non-dramatic situations requires the thought of amusement mechanics and flow. The concepts of amusement mechanics and elements speak to two pivotal instruments within the field of gamification. The foremost predominant amusement mechanics are point frameworks, which give clients rewards through a large number of measurements and categories. Furthermore, focus can be utilized to improve support. The moment category is that of challenges and identifications, which speak to accomplishments. Challenges speak to seen tasks for clients to total, with the ensuing arrangement of rewards for fruitful completion. Trophies and identifications serve as visible forms of acknowledgment for clients who have come to modern levels and completed challenges. The following category is that of virtual merchandise, which permits clients to buy virtual things such as skins and props through the focuses they have amassed. Virtual products speak to viable implies of empowering clients to collect more focus and subsequently accomplish more prominent levels of engagement. At last, there are leaderboards, which combine with the primary few diverse diversion mechanics to invigorate client loyalty(da Rocha Seixas et al., 2016).

### 3. Literature review

In Revealing the theoretical basis of gamification: a systematic review and analysis of theory in research on gamification, serious games and game-based learning, it is expressed that gamification is closely related to two other concepts: genuine recreations and game-based learning. In game-based learning, the learning results are characterized by the utilization of amusement substances and amusement mechanics. Besides, the consolidation of problem-solving spaces and challenges gives learners a sense of accomplishment. The objective of game-based learning is to encourage learning. It is based on the utilization of developed recreations, which are frequently alluded to as genuine recreations. Even though genuine diversions and game-based learning are distinct from gamification in that they are total recreations, though gamification misuses the components of diversions and applies them to real-world scenarios, all of these concepts share a common string: a genuine objective, such as instruction or behavioral alter, is accomplished through a dynamic gaming encounter, and not just for entertainment (Krath et al., 2021b).

Several distinctive gamification instruments have been recognized that back client support and learning.

Firstly, it can be seen that gamification frameworks can encourage collaboration and back between clients through the usage of gather exercises and communication societies, which help them work together to resolve issues. Besides, diversions and gamification can give social bolster through synchronous and nonconcurrent implies, such as chat and talk gatherings, in this manner empowering clients to communicate and share encounters. Moreover, gamification frameworks can give users the alternative to choose distinctive learning ways and assignments, in this manner empowering them to tailor their learning fashion to their inclinations and capacities. Moreover, genuine recreations can give learners virtual situations that allow them to openly investigate and experiment with distinctive ways and choices to attain their learning objectives. At last, the execution of gamification frameworks can improve the delight and engagement of learning encounters by altering the trouble of challenges to adjust to the individual's capacity level. In this way, the usage of gamification components can serve to fortify users' interest and engagement in learning, subsequently advancing more successful learning and growth(Krath et al., 2021b).

According to the article Analyzing Gamification of Analyzing Gamification of "Duolingo" with Focus on Its Course Structure, Duolingo could be a free online stage planned for dialect learning. The stage utilizes gamification procedures, such as the granting of identification and the introduction of challenges, in arrange to encourage users to lock in with dialect learning. The objective of the identifications is to improve the inspiration of the learners and to serve as the establishment of a dialect course. The consolidation of diversion components into the learning substance serves to improve client engagement and inspiration, instead of simply giving amusement. The application of gamification components to non-game situations aims to improve user engagement and inspiration. The structure of the dialect learning course is built through the course structure, identifications, and other amusement components that upgrade client inspiration to memorize the dialect. Duolingo is planned to encourage the method of learning a dialect in a pleasant way for the client, instead of making the course fun or relaxing. Thus, its application of gamification components is planned to improve learner inspiration and engagement(Huynh et al., 2016).

In the article Investigating the Effects of Digital Gamification-Based Language Learning: A Systematic Review, it is stated that comparative studies of gamification-based learning and traditional teaching have demonstrated the superiority of gamification in the field of language learning. Furthermore, the impact of gamification on student learning has been demonstrated to enhance the quality of learning(Dehganzadeh & Dehganzadeh, 2020).

#### **4. Duolingo as a case study**

Duolingo may be a free online dialect learning stage open through the web (duolingo.com) or as an app on portable gadgets. Concurring to its possess site, Duolingo is the foremost well-known dialect learning program in the world, with over 150 million users(Munday, 2017). One of Duolingo's most outstanding highlights is gamification. As clients advance in their procurement of dialect abilities and lock in within the survey of already obtained information, they may gain an assortment of gamified rewards, counting Encounter Focuses (XP), identifications, and winning streaks (Hadi Mogavi et al., 2022).

#### **5. Application of theory to Duolingo**

So how does Duolingo join amusement mechanics into its stage? An arrangement of ingeniously designed gamification components serves to altogether improve the learning encounter and engagement of clients. Firstly,

the Involvement Focuses (XP) framework gives clients a prompt sense of achievement as they total each lesson, survey, or lock-in in other learning exercises. Besides, the streak mechanism encourages users to preserve the propensity of completing learning errands for different days in a push, in this manner spurring them to drive forward by recording and displaying the number of days in a streak. Besides, this moreover upgrades client devotion.

The Leaderboards serve to fortify a sense of competition among users, who can see their rankings on worldwide and neighborhood leaderboards. This encourages them to endeavor for advancement. The course substance is displayed within the frame of an aptitude tree, with each aptitude module speaking to a discrete unit. The client must advance through the tree, opening unused information in a step-by-step way. This dynamic learning strategy is outlined to encourage the efficient authority of dialect abilities. The virtual cash framework empowers clients to collect virtual cash by completing assigned assignments or achieving indicated objectives. This cash can at that point be utilized to purchase in-app things, such as the alternative to skip a day of learning, get to extra learning openings, or open special courses.

The granting of accomplishment identifications serves to recognize clients who have come to particular objectives or performed well amid the learning preparation. These identifications not only serve as an image of honor but moreover propel clients to challenge themselves with more objectives. At long last, social interaction highlights permit users to lock in collaborative learning with their peers, giving a gathering for support and competition, in this manner upgrading the learning involvement and fostering a strong and intuitive environment.

The joining of gamification components into the Duolingo stage not as it were renders it a viable language learning instrument but also sets up it as a fun and challenging learning stage. The previously mentioned plans serve to improve users' inspiration to memorize, encouraging persistent advancement in a loose and agreeable environment.

## **6. Discussion**

### **6.1. Benefits**

The utilization of Duolingo as a dialect learning medium has the potential to upgrade learner action within the teaching and learning preparation. This can be due to the consolidation of gamification components into the learning handle, which can be employed to propel and engage learners in Duolingo(Amin, 2021).

The preferences of consolidating gamification elements into Duolingo's learning stage expand past simply upgrading learner inspiration. The consolidation of game-like components into the Duolingo stage encourages the creation of a locks-in and intelligently learning environment, which serves to keep up client inspiration and commitment all through the dialect learning handle. The provision of rewards for advancement and a sense of accomplishment serves to preserve steady learning propensities.

Besides, the quick criticism and compensation framework inalienable in Duolingo's gamified plan encourages the support of positive learning behaviors and the adjustment of mistakes in an opportune way, in this manner improving the productivity of the learning handle. The expertise tree structure empowers learners to see their advances, which improves their certainty and energizes them to proceed utilizing the app.

The joining of gamification into the Duolingo learning stage serves to upgrade the dynamism, appeal, and viability of the dialect learning experience. By making the learning handle agreeable and intuitive, Duolingo makes a difference for learners to stay propelled, create reliable learning propensities, and accomplish way better

dialect capability comes about.

## **6.2. Challenges**

The application of gamification by Duolingo may result in a misfortune of certainty among users within the viability of the learning preparation, which might have a negative effect on their capacity to learn. Such abuse may also result in a loss of intrigued in learning, which may eventually lead to a cessation of learning or indeed the cessation of use of learning apps. Our findings demonstrate that gamification may once in a while have an inconvenient impact on users' well-being. The abuse of gamification may result in an extent of antagonistic impacts on well-being, counting dissatisfaction, sentiments of appreciation, self-blame, the advancement of physical well-being issues, and the disturbance of day-by-day schedules. Besides, Duolingo's abuse of gamification may deny clients their right to learn in a fair learning environment. Clients may lock in unjustifiable behaviors, such as cheating, which seem to create a sense of shamefulness for other users and influence the learning climate and inspiration (Hadi Mogavi et al., 2022).

An intemperate center on competitive components, such as leaderboards and winning streaks, may result in undue weight and anxiety for a few clients, possibly changing the learning involvement into a source of push instead of enjoyment. The weight to keep up tall rankings or winning streaks may result in burnout, as learners may see gamification as more vital than actual language learning and comprehension.

Another noteworthy downside is that gamification may result in a move in the center from inborn inspiration to extrinsic rewards. When clients gotten to be excessively centered on winning focuses, identifications, or keeping up a winning streak, they may lose the focus of the primary objective of becoming proficient in a modern dialect. This move may result in a lessening within the profundity and quality of learning, as clients may lock in in shallow activities solely to earn rewards, instead of comprehensively understanding and acing the fabric.

Additionally, the uniform application of gamification components falls flat to considering the individual contrasts in learning preferences and styles. A few learners prosper in a gamified environment, while others may see gamification as a diversion or an obstacle to their learning, driving dissatisfaction and disengagement. This approach, which expects a uniformity of reaction to gamification, may come up short of meeting the assorted needs of all clients, possibly barring those who don't react well to gamified learning strategies.

The overreliance on advanced rewards and accomplishments may accidentally decrease the esteem of real-world dialect applications and hone. It is conceivable that learners may organize in-app accomplishments over the application of their dialect aptitudes in real-life circumstances, which is basic for the advancement of genuine authority and familiarity.

## **7. Conclusion**

Gamification is getting to be a well-known drift and is effectively and ceaselessly being coordinated into different stages. Joining gamification into advanced learning stages such as Duolingo speaks to an inventive challenge. This approach essentially makes strides in client engagement and educational results wherever conceivable. By joining gaming components such as XP, streaks, leaderboards, and expertise trees, Duolingo has made an intelligently and propelling learning environment that empowers clients to develop steady consider propensities and fortify positive learning behaviors. These components help in maintaining user motivation, promoting orderly learning, and giving quick input, all of which contribute to more compelling dialect learning.

In any case, the unseemly application of gamification can result in unfavorable consequences. An

intemperate center on competitive components may result in undue push and uneasiness, occupying consideration from intrinsic motivation to outward rewards. This will result in shallow learning and a diminishment in the esteem of real-world dialect applications. In outline, the consolidation of gamification into the learning prepare can upgrade the general involvement, but the abuse of gamification can have the inverse impact, decreasing the viability of the learning involvement.

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