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Internship Thesis

Cranfield University
MSc in Management

2023
Academic Year: 2022 - 2023

Supervisor: Manish Singh
September 2023



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List of Abbreviations

IT	Information Technology
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1 Introduction

1.1 Background and Context

Social media is very popular with college students, but it's hard for the companies to keep its users interested and coming back. Many social media platforms compete fiercely for the attention and loyalty of a limited number of users (Alhabash & Ma, 2017). In this environment, gamification represents a promising approach to enhance students' intrinsic motivation for continued social platform engagement by satisfying fundamental needs for competence, autonomy, and social relatedness (Hanus & Fox, 2015; Dicheva et al., 2018).

Gamification refers to the application of game elements like points, badges, leaderboards, and challenges to drive participation, engagement, and motivated behaviours in non-game contexts (Deterding et al., 2011). Adding game elements to tasks can make them more fun and motivate people. This can help with learning or getting people to take desired actions. It works by using ideas from psychology and game design to provide incentives. (Koivisto & Hamari, 2019; Nacke & Deterding, 2017).

Prior studies have explored the implementation of gamification techniques, such as points, badges, and leaderboards, in educational contexts to increase student motivation and engagement (Dicheva et al., 2015; De-Marcos et al., 2014). Some research has also examined the use of gamification specifically in social media platforms and online communities designed for student users, such as investigations by Denny (2013) and Domínguez et al. (2013). However, empirical research on optimal gamification strategies for enhancing engagement on educational social media sites is still limited (Denny, 2013; Domínguez et al., 2013). This investigation aims to help address that gap through an in-depth analysis tailored to the context of an emerging student-focused social media platform called Stunited.

Stunited, often called as 'Student United', is a pioneering niche social media network dedicated exclusively to serving the higher education community. Its primary objective is to create a global platform connecting students, educational organizations,

professionals, businesses, and other stakeholders within the academia. It offers diverse services like showcasing university courses, promoting scholarships, highlighting jobs, and providing campus updates to meet users' needs. As an innovative early-stage platform, Stunited recognizes the potential of thoughtfully designed gamification strategies to enhance user engagement and motivation. It believes in the strategic use of effective gamification approaches which can help drive ongoing community participation - thereby differentiating itself within the competitive social media landscape.

To sustain growth and engagement with its target student demographic, Stunited requires carefully designed gamification systems aligned with motivational psychology theories and user preferences. Optimized, ethical gamification strategies that incorporate creative game mechanics tailored to students' needs represent an opportunity for Stunited to drive key business metrics around user acquisition, retention, and revenue generation, despite limited resources compared to rivals. By examining data on effective game design elements specific to students through rigorous research, Stunited can develop novel gamification approaches to build participation momentum and meaningful user habits that set the platform apart. However, gamification risks unintended consequences for students, requiring further research to guide Stunited's strategy ethically.

In summary, this paper aims to address gaps in understanding how social media platforms like Stunited can utilize gamification strategies tailored to student users in an ethical manner. The research will explore the following questions:

RQ1: What and How can Stunited employ targeted gamification techniques to effectively increase active engagement among its student users?

1.2 Significance

This research aims to provide original, data-driven insights into the design and application of effective game elements and motivational incentive structures specifically suited for the valuable but understudied context of increasing student social media

engagement. The findings may offer both useful theoretical contributions and practical implications for developing optimized, ethical gamification systems on emerging social platforms seeking to engage student user communities while achieving key business goals. Overall, the results can meaningfully inform best practices for thoughtful, targeted gamification implementation by startups like Stunited that aim to strategically leverage gamification approaches to attract students and build sustainable participation momentum within competitive digital environments.

2 Literature Review

2.1 Introduction

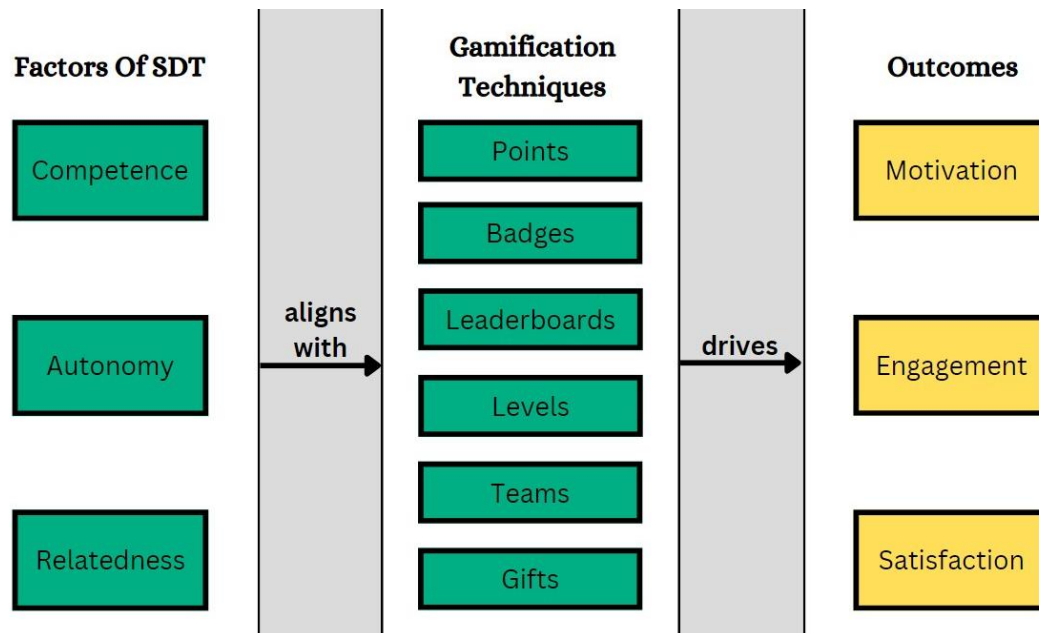
Gamification, or the integration of game design elements into non-game contexts (Deterding et al., 2011), has gained popularity as a strategy to increase user engagement and motivation in digital platforms. Recent research has explored the potential of gamification approaches to enhance social media platforms geared towards student populations. This literature review synthesizes research on gamification frameworks, mechanics, and principles that can successfully improve engagement and motivation on social networking platforms designed for students. The review focuses on key studies that examine specific game mechanics, user experience design factors, and psychological outcomes that contribute to effective gamification for educational social platforms. By reviewing evidence on gamification strategies tailored to student users, this synthesis aims to inform the development of highly engaging and educational social networks and communities for student users.

2.2 Self-Determination Theory and Gamification

Self-determination theory (SDT) identifies three key needs that drive human motivation: competence, autonomy, and relatedness (Ryan & Deci, 2000). Satisfying these needs through gamification can powerfully motivate participation. Xi and Hamari (2021) provided evidence that gamification features like points, badges, customizable elements, teams, and chats directly satisfy competence, autonomy, and relatedness needs. Their findings demonstrated that gamification elements affording these needs drive greater motivation, while those failing to satisfy psychological needs are less effective. Other studies have similarly shown the motivational impact of matching gamification techniques to SDT needs. For example, relatedness-focused leaderboards increased continuing motivation better than competence-focused leaderboards (Mekler et al., 2017), and supporting autonomy led to higher engagement and satisfaction (Codish & Ravid, 2021).

In summary, research indicates that thoughtfully designed gamification that provides opportunities for mastery, control, and social connection can leverage the key motivational affordances identified in SDT to enhance user engagement across contexts

(Xi & Hamari, 2021). When gamification elements map onto competence, autonomy, and relatedness, they can optimize motivation.



2.3 Evidence of Efficacy of Gamification

Multiple experimental studies provide compelling evidence that well-designed gamification features boost participation and activity in online student communities. An experiment was conducted where they implemented badges, leaderboards, and points in a university course discussion forum, finding a 15-20% increase in student posting engagement (Denny, 2013). A gamified social networking platform was also developed called BEE for engineering students that reported increased motivation and class activity (Ibanez et al., 2014).

In a controlled experiment, De-Marcos et al. (2014) compared a gamified e-learning platform to a standard system for university students, finding the gamified version increased student engagement, satisfaction, and academic performance on quizzes. Domínguez et al. (2013) similarly conducted an experiment gamifying half of a university course while teaching the other section conventionally. The gamified condition resulted in significantly better learning outcomes, engagement, and course ratings. These

experimental results provide powerful evidence that gamification can directly improve student motivation and learning.

2.4 Optimizing Gamification Design for Social Motivations

However, research on gamification and motivation emphasizes aligning gamification design with user motivations. For students, social elements may have the greatest appeal and impact. In interviews with regular student gamers, Nakamura and Csikszentmihalyi (2009) found social motivations like interacting with peers dominated gaming enjoyment over achievement or immersion motivations.

Hanus and Fox (2015) experimentally compared individual, team-based, and social reward systems, finding social rewards like helping fellow students most motivated learning and course engagement. Cooperatively earning badges as teams resulted in higher intrinsic motivation and performance than individual badge earnings. This aligns with self-determination theory, suggesting social motivations like relatedness are more impactful than competence alone (Ryan & Deci, 2000).

Thus, cooperative, prosocial mechanics tailored for students' social values and needs warrant focus over competitive systems. Social gifting, teammates, and in-group competitions satisfy relatedness needs critical for driving intrinsically motivated participation.

2.5 Conceptual Frameworks for Gamification Design

Conceptual frameworks offer research-based guidance for designing and implementing gamification in educational contexts. Thoughtfully applying established models ensures gamification features align with student abilities, motivations, and intended learning outcomes (Dichev & Dicheva, 2017). Two valuable frameworks for gamification design are the MDA framework and the DMC framework.

The MDA framework distinguishes three interconnected components of gamification: mechanics, dynamics, and aesthetics (Hunicke et al., 2004). Mechanics comprise the specific game elements implemented, like points, levels, leaderboards, and badges. For instance, a mechanic could reward users with badges for reaching certain point thresholds. Dynamics represent the psychological responses and social interactions that emerge from user engagement with mechanics, such as collaboration, status-seeking, disengagement, or exclusion. Aesthetics describe the emotional outcomes users experience, including curiosity, delight, frustration, or boredom. Tracking dynamics and aesthetics provides insight into optimizing mechanics to achieve target participation behaviours.

The DMC framework identifies key factors of gamification: motivation affordances, ability requirements, and trigger cues (Morschheuser et al., 2017). This stresses the importance of aligning gamification features with user skills, needs, and motivations. For example, competitive mechanics like timed challenges requiring quick reflexes may exceed struggling students' abilities, resulting in frustration. Alternatively, social gifting mechanics better suit motivations for peer bonding and a sense of inclusion. Playtesting and assessing student abilities informs the design of accessible, rewarding mechanics.

Thoughtfully applying frameworks like MDA and DMC allows researchers and educators to implement gamification that engages students and achieves learning objectives. The examples illustrate how considering interconnected factors like motivation and ability can yield rewarding gamification implementations tailored to learners' needs.

2.6 Specific Gamification Techniques

Gamification in education often utilizes techniques focused on providing students with progress feedback, social connection, narrative engagement, and discovery. Well-designed implementations of these mechanics can fulfil key motivations and enhance learning. Progress elements like points, levels, and badges give measurable feedback on students' growth in skills and mastery of content (Dichev & Dicheva, 2017; Sailer & Homner, 2020). Incremental metrics create a sense of momentum as learners earn

recognition for competence improvements. Badges providing Positive feedback satisfy needs for personal growth.

Social techniques such as gifting points, team cooperation, and collaborative competitions leverage motivations for peer bonding and social development (Hanus & Fox, 2015; Buckley & Doyle, 2016). Social mechanics meet the needs for belonging and connection with others. Narrative gamification adds story-based quests, challenges, and character roles to immerse students in skill progression. Narrative context sustains engagement and effort over time (Banfield & Wilkerson, 2014).

Discovery mechanics like hidden content and Easter eggs tap into drives for exploration and curiosity. Although external rewards like prizes may temporarily boost participation, overuse can undermine intrinsic motivation more vital for deep learning (Deci et al., 2001).

Aligning techniques with motivational frameworks promotes meaningful gamification implementations tailored to learners. The examples demonstrate how research-based mechanics can fulfil student needs and enhance education.

2.7 Contextual Factors in Gamification Success

However, research again emphasizes that contextual factors heavily influence gamification success. In studies focused on the gamification of student platforms, user-centred design emerged as critical, with continuous playtesting and iteration based on participation data required to optimize engagement and learning (Morschheuser et al., 2017; Seaborn & Fels, 2015). As Knutas et al. (2014) conclude from designing a gamified programming course, “there is no one size fits all solution”. Rightly implementing gamification for educational contexts requires careful user analysis, need-matching, and customization.

2.8 Potential Pitfalls of Poorly Designed Gamification

While gamification shows promise, poorly designed implementations risk detrimental outcomes like diminished intrinsic motivation. For example, point systems may drive extrinsic participation without deeply engaging students (Hanus & Fox, 2015). Leaderboards comparing student performance can demotivate lower-achieving learners by threatening their competence (Christy & Fox, 2014). Overemphasizing external rewards for learning tasks can undermine vital intrinsic motivations (Deci et al., 2001).

Well-designed gamification satisfies the needs for competence, autonomy, and relatedness through social rewards, progress feedback, and celebratory elements (Ryan & Deci, 2000). For instance, personalized badges recognizing skill gains provide informative competence feedback without social comparison. Gifting points for helping peers meet relatedness needs. Unlocking new content through story-based challenges preserves autonomy.

In summary, research indicates that thoughtfully designed gamification can increase participation, social learning, and engagement in online student platforms by addressing key motivations (Sailer & Homner, 2020). Both correlation and experimental studies confirm that properly implemented gamification has benefits. However, iterative user-centred design approaches emerge as essential to successful contextual implementations.

Elements like social gifting, badges, and challenges require careful tailoring to student needs and contexts, informed by playtesting data (Dichev & Dicheva, 2017). As the literature emphasizes, optimizing gamification necessitates customization to maximize engagement for specific student populations. While further research comparing mechanics and frameworks would enrich design knowledge, current findings provide a meaningful foundation for research-guided gamification implementation in education.

3 Research Methodology

3.1 Introduction

This research adopts Saunders et al.'s (2019) research onion model to systematically develop the methodology. The research onion provides a valuable framework for addressing key components of empirical research design through interconnected layers, from research philosophy to specific procedures (Saunders et al., 2019). Using this model facilitates constructing a cohesive qualitative methodology tailored to investigating gamification strategies for student social media engagement.

3.2 Literature Review Insights

The literature review highlighted the following methodological considerations:

- Multiple studies emphasized the value of iterative, user-centred design approaches involving extensive playtesting and refinement of gamification features based on participation data and user feedback (Dichev & Dicheva, 2017; Morschheuser et al., 2017). This implies qualitative interviews to gather student perspectives could enable similar iterative improvement of gamification strategies.
- The research stressed the contextual nature of effective gamification, indicating qualitative techniques are needed to gain insights into this target user group's specific motivations and preferences.
- Aligning gamification to motivational frameworks like self-determination theory was found to enhance engagement. Qualitative data on student views of gamification features satisfying competence, autonomy and relatedness needs could provide guidance.
- Studies warned of potential pitfalls of poor gamification implementations diminishing intrinsic motivation. Interviews probing student viewpoints may identify ethical risks specific to this demographic.

Also, here are some key points justifying the use of industry expert interviews in addition to student interviews:

- Expert interviews can provide complementary perspectives to triangulate findings and reduce reliance on a single data source. This strengthens the research's validity.
- Industry experts have specialized knowledge of implementing successful gamification strategies gained through professional experience. Tapping into this can enrich the qualitative insights.
- Experts may identify practical challenges, limitations, or considerations for real-world applications that students are unaware of. This grounds the research in gamification design realities.
- Interviews with professionals directly involved in educational gamification design can reveal best practices and lessons learned that shape their approach. This can inform developing guidelines.
- Experts can give an external business perspective on how gamification aligns with platform objectives like user engagement and revenue goals.

In summary, Student interviews along with industry expert interviews add crucial triangulation and specialized practical knowledge regarding real-world gamification implementation that complements the student user perspective which would give an idea of developing contextualized, motivationally optimized, ethical gamification strategies through an iterative, user-focused design approach to strengthen the overall qualitative methodology.

Serial	Role	Organisation	Interview Duration
1	CEO	Stunited	34 minutes

2	CFO	Stunited	23 minutes
3	Business Development Manager	Stunited	40 minutes
4	Product Manager	Tumblr	48 minutes
5	Product Manager	LinkedIn	55 minutes
6-15	Students	Various Universities	Avg. 25 minutes

3.3 Research Philosophy

A critical realist philosophy guides this study, assuming an objective reality while recognizing the subjective viewpoints involved in research (Madill et al., 2000; Saunders et al., 2019). Critical realism holds that there are objective truths while understanding knowledge is filtered through human perspectives and biases. This philosophical stance suits the exploration of students' subjective interpretations and experiences with gamification strategies while seeking to uncover meaningful insights into optimal gamification design through their perspectives. Critical realism supports the use of qualitative methods to understand subjective viewpoints and generate insights into an objective reality.

3.4 Research Approach

An inductive approach is utilized to allow findings to emerge progressively from the qualitative data based on student responses, rather than testing predetermined hypotheses (Gabriel, 2013). This open-ended orientation aligns with the exploratory goals of the research, foregrounding students' perspectives in shaping new understandings about effective gamification techniques to inform practice, rather than imposing pre-existing assumptions. Inductive research starts with granular observations and seeks to establish patterns and general conclusions from the ground up.

3.5 Research Strategy

An ethnographic strategy will be used to deeply explore student perspectives on gamification strategies through immersive observation and interviews (Hammersley, 2018). This qualitative approach provides rich, holistic insights into students' firsthand experiences and preferences by gathering data in real-world educational settings. The researcher will observe which gamification techniques students respond to positively or negatively during classes. Additionally, in-depth interviews will probe students' perspectives on engagement, motivation, and learning gains. Together, these ethnographic techniques facilitate understanding gamification through students' eyes.

3.6 Methodological Choice

Qualitative techniques suit the ethnographic, inductive approach of the study (Gabriel, 2013; Hammersley, 2018). Specifically, semi-structured interviews will enable the collection of detailed, nuanced data directly from students regarding their views on the most effective, engaging gamification techniques for learning. The semi-structured format uses preset questions to guide the discussion while allowing flexibility to probe emerging topics. Additionally, expert interviews with gamification designers will provide complementary industry perspectives on best practices. All interviews will be transcribed and analysed using thematic coding techniques.

3.7 Time Horizon

A cross-sectional time horizon, gathering data at one time point, is appropriate for this initial exploratory study since it seeks to develop baseline understandings rather than examine longitudinal changes over time (Saunders et al., 2019). Conducting cross-sectional interviews will yield impactful qualitative data to develop rich initial insights into student perspectives on gamification strategies. Future studies could build on these findings using longitudinal data to assess evolving perceptions.

3.8 Data Collection & Analysis

Semi-structured interviews will be conducted with approximately 10 university students and 5 professionals in the social media industry as the primary data sources. For the student interviews, open-ended questions will probe perspectives on game elements and features that motivate ongoing social media engagement and participation. The expert interviews will provide complementary insights from professionals with applied experience in successfully designing gamification strategies. Questions will focus on eliciting their practical knowledge of effective game design principles, implementation considerations, and perceived limitations. Using semi-structured interviews allows for focused, qualitative data collection while retaining some consistency across the student and expert participants (Adams, 2015). Incorporating both target groups strengthen the validity of findings and proposed gamification approaches by providing methodological triangulation from multiple primary perspectives (Carter et al., 2014). The student view represents the user experience, while experts offer real-world design principles and viability considerations.

Purposive sampling will be used to select a diverse range of students representing different ages, disciplines, gamer profiles, and social media experiences (Robinson, 2014). This strategic recruitment of information-rich cases meeting specified criteria will enable capturing a breadth of student viewpoints regarding gamification approaches (Etikan et al., 2016). Interviews will be recorded and professionally transcribed. Transcripts will be analysed through thematic analysis using NVivo qualitative data analysis software which involves coding responses to identify key patterns and themes in students' stated preferences, motivations, and experiences (Braun & Clarke, 2006; Maguire & Delahunt, 2017). NVivo will enable efficient and rigorous coding, categorization, and analysis of qualitative data.

Data collection and analysis will use an iterative process, with initial student interview findings shaping subsequent interview questions and focusing on emerging concepts in greater depth (Agee, 2009). Early expert interviews will also inform student questions. Preliminary theme identification will guide further targeted data gathering and coding to validate and refine key themes using NVivo. These qualitative techniques will facilitate rich multi-perspective data generation to uncover optimal, ethical gamification strategies

aligned with students' preferences and motivations within their specific social media context. The combination of student experiences and industry expertise provides a powerful qualitative methodology for exploring effective gamification design.

In summary, the research onion framework systematically guides the development of an exploratory qualitative methodology using interviews to uncover students' perspectives on effective gamification techniques for social media engagement. NVivo analysis of interview transcripts will enable rigorous coding and thematic analysis. The iterative approach aligns with principles of user-centred, context-sensitive gamification design from the literature.

4 Key Findings

4.1 Introduction

Building on the rigorous qualitative methodology established through interviews with industry experts and students, this section presents the key results and findings that emerged from NVivo's systematic coding and thematic analysis process. As outlined in the methodology, semi-structured interviews were conducted with both user groups to gain complementary perspectives, and transcripts were iteratively coded to uncover major themes related to user motivations, engagement barriers, desired innovations, retention drivers, and views on gamification techniques.

This Results and Findings section synthesizes the major insights uncovered through the NVivo analysis across these five themes. By elucidating the factors that captivate and alienate student users from both strategic and experiential lenses, this analysis aims to establish actionable directions to guide the next generation of socially optimized, motivationally aligned platforms geared towards digital-native students. The empirical results lay the foundation for developing maximally engaging, sticky, and ethically purposeful educational social media experiences tailored to contemporary students' values and needs.

4.2 User Needs and Motivations

Analysis uncovered social connections, personalized relevance, and authenticity as primary motivators for students, aligning with self-determination theory's emphasis on relatedness, competence, and autonomy needs driving engagement (Ryan & Deci, 2000). Stunited's CEO explained students desire a "relevant environment" fostering "meaningful connections", while the Tumblr PM prioritized enabling "genuine connections and creative expression." Students like Student 1 echo this, saying social media helps them "stay connected with friends."

Both experts and students emphasized community belonging, corresponding to self-determination theory's relatedness need. Stunited's BDM said they encourage joining "communities aligned with interests." Student 4 similarly noted the value of "connecting with fellow developers." Facilitating social bonds centered on shared passions appears key for students (Mekler et al., 2017). Authentic self-expression also emerged as a core need, satisfying autonomy desires. The Tumblr PM described enabling this as vital, while students like Student 7 want to publicly feature their work and ideas. Research indicates that supporting autonomy boosts intrinsic motivation critical for sustained engagement (Ryan & Deci, 2000).

Additionally, students value discovering personalized content catered to their goals, whether professional knowledge, academic research, or recreational breaks from studying, reflecting competence needs. Marketers like the LinkedIn PM recognize this, explaining they curate content around "professional networking." Matching difficulty to abilities enhances motivation (Morschheuser et al., 2017).

However, both experts and students cautioned that excessive, low-quality content risks undermining motivation. Stunited's CEO warned against "overwhelming content saturation", while their BDM explained users become exhausted by the "constant quest for likes", emphasizing the downsides of extrinsic rewards (Deci et al., 2001). Targeting intrinsic relevance over engagement metrics is prudent.

In summary, community, authenticity, personalized relevance, and quality over quantity emerged as key factors for fulfilling student needs on social platforms, corresponding to three pillars of self-determination theory.

4.3 Barriers to Engagement

A prevalent barrier highlighted was irrelevant, excessive content. Both students like Student 6 and experts including Stunited's CEO referenced this issue, corresponding to past research on content overload diminishing intrinsic motivation (Levordashka & Utz, 2016). The LinkedIn PM explained cluttered feeds contribute to user frustration. Personalized recommendation algorithms tailored to abilities could help overcome this hurdle, in line with the DMC framework (Morschheuser et al., 2017).

Privacy and ethical data use concerns also emerged strongly. The Stunited CEO identified these as factors in disengagement, with students like Student 9 reiterating privacy concerns. Maintaining user trust through responsible data ethics is essential for engagement in the digital age (Shin & Seo, 2020). Toxicity and negativity online likewise hinder participation. The Tumblr PM explained harmful content exacts a psychological toll on users. Students including Student 3 desired protection from cyberbullying and polarization, consistent with evidence on their detrimental impacts (Chen & Sakamoto, 2022). Fostering an inclusive, respectful environment is important.

Finally, annoying ads, spam, and algorithm issues bothered both students and experts, creating user fatigue. The Stunited CFO noted users dislike irrelevant promotions. Student 10 complained that "excessive advertisements" diminish engagement. Minimizing annoyance factors helps sustain participation over time, enhancing habit formation.

In summary, low-quality content, ethical issues, negativity, and nuisance factors emerged as barriers companies must overcome through innovations catering to student needs and intrinsic motivations.

4.4 Suggestions for Innovation

Personalization allowing users greater curation control over their experiences emerged as a top suggested innovation, with experts like the Tumblr PM advocating increased user content customization. Students like Student 8 wanted more personalization options and algorithmic refinement to improve relevance. Research indicates personalized experiences can powerfully boost engagement by catering to individual needs and interests (Hartmann et al., 2022).

Social, community-focused features also emerged strongly across interviews. Stunited's BDM described their interactive polls and challenges. The Tumblr PM emphasized tools fostering creative expression. Gamification incorporating cooperative mechanics could further boost engagement by satisfying relatedness needs (Mekler et al., 2017).

Digital literacy initiatives and ethical content practices were highlighted by both students and experts aiming to combat misinformation and negativity. The Stunited CEO described nudging users toward meaningful engagement over passive scrolling, emphasizing ethical design. Education on responsible online behaviour may also enrich user experiences (Chen & Sakamoto, 2022).

Overall, personalized control, social interactivity, ethical gamification approaches, and digital well-being initiatives emerged as promising avenues for innovation tailored to modern student values and needs based on the qualitative findings.

4.5 Drivers of Retention

Personalized experiences were a key retention-driving theme, with the Stunited BDM emphasizing keeping content “relevant” and “engaging” long-term. Students like Student 4 valued notifications aligned with their goals. Continually adapting

to student needs through relevance-matching and feedback on mastery promotes loyalty and habit formation by sustaining intrinsic motivation (Hartmann et al., 2022; Morschheuser et al., 2017).

The Stunited CEO explained retention involves “fostering meaningful connections” over time by facilitating communities centered on shared interests and values. Student 5 echoed this, wanting ongoing interactions with fellow “marketing enthusiasts.” Research indicates relatedness satisfaction retains users (Mekler et al., 2017). Enabling durable relationships around passions drives lasting engagement.

Supporting academic and professional growth also motivates sustained participation according to interviewees. The LinkedIn PM focuses on networking with students around shared career goals. Student 9 similarly highlighted opportunities for career advancement on social platforms. Helping students succeed retains them by enabling a sense of progress.

In summary, interviews indicated personalized relevance, goal-oriented communities, and supporting growth through competence feedback are crucial factors in ensuring enduring student participation and habit formation on social platforms.

4.6 Potential Scope for Gamification

The interviews revealed cautious optimism around gamification alongside ethical considerations about potential downsides if poorly implemented. The Stunited CEO explained selective use of gamification elements but warned of risks like “unhealthy competition”, mirroring studies on detrimental social comparison (Christy & Fox, 2014). Student 9 found it “fun and motivating” under certain

conditions, liking short-term rewards but desiring deeper engagement long-term (Hanus & Fox, 2015). Careful implementation balancing benefits and risks was advised across the board.

However, participants recognized gamification's engagement potential if thoughtfully designed around student needs for autonomy, competence, and relatedness (Ryan & Deci, 2000). The Stunited BDM called it a "powerful tool to boost engagement." Student 5 welcomed it "if designed to reward collaboration and knowledge sharing", stressing cooperative elements. But excessive competition raised concerns about demotivation (Hanus & Fox, 2015). Interviewees emphasized the importance of aligning gamification with core platform values and users' well-being. The Tumblr PM warned about inadvertently encouraging "addictive behaviours", while the Stunited CEO similarly cautioned against possible "addiction." Student 2 stressed gamification should avoid detracting from a platform's primary utilities.

Overall, the qualitative findings revealed openness to value-aligned gamification focused on intrinsically motivating students by satisfying social needs and supporting growth. However, ethical risks demand thoughtful design. Further research can build on these perspectives to refine specific approaches.

4.7 Conclusion

In conclusion, this rigorous NVivo analysis of qualitative interviews with experts and students provides invaluable empirical insights into optimizing social media experiences for digitally immersed students today. Key takeaways include the primacy of forging authentic connections centered on shared passions, sustaining engagement through continual relevance-matching and progress feedback, and deploying carefully calibrated gamification techniques focused on intrinsic motivations. However, persistent issues like information overload,

negativity, and ethical risks necessitate ongoing innovation. While additional research is needed to refine specific implementations, these rich findings offer vital strategic guidance grounded in motivational psychology theories and students' expressed preferences. Overall, the results illuminate crucial opportunities to evolve increasingly captivating, sticky, and ethically purposeful social platforms that resonate with contemporary students' values. Executing on these human-centric insights, whether through enhanced personalization, prosocial gamification, digital well-being tools, or safeguards against misinformation, promises to drive the next wave of educational community-building online.

5 Discussions and Recommendations

5.1 Introduction

Integrating the literature and methodology, this chapter provides an in-depth discussion of optimal gamification techniques to increase engagement on Stunited based on the key findings that emerged from the qualitative interviews. Thematic analysis of the interviews revealed social connections, personalized relevance, and authenticity as primary motivators for students, while barriers like irrelevant content and ethical concerns hindered engagement. Students valued personalized progress tracking, social rewards, and roleplaying features in gamification aligning with competence, relatedness, and autonomy needs. Building on these empirical insights, this chapter proposes targeted short and long-term strategies grounded in motivational psychology theories and tailored to students' expressed preferences from the interviews. A detailed phased roadmap is outlined for implementing optimized gamification techniques, along with an analysis of study limitations and opportunities for impactful future research to advance knowledge in this domain.

5.2 Significance of Initial Findings

This research provided important initial exploratory data on optimized, tailored gamification approaches for the valuable but understudied context of student social media users. Interviews revealed student preferences for personalized progress tracking, social rewards, and roleplaying features aligning with competence, relatedness, and autonomy motivations from self-determination theory (Ryan & Deci, 2000; Hanus & Fox, 2015).

These insights establish an empirical foundation for implementing targeted game mechanics and incentive structures. Further research can build upon these findings using triangulation, experimentation, and longitudinal tracking to enrich

design knowledge. Overall, the identification of key factors in driving user engagement provides actionable direction for enhancing social platforms.

5.3 Proposed Gamification Strategies

Reflecting the contextual emphasis of literature (Dichev & Dicheva, 2017), short and long-term strategies are proposed based on student motivations identified through interviews:

5.3.1 Short-Term Engagement Boosting Tactics

Short-term initiatives should focus on easily implemented, low-cost tactics to quickly boost participation, including:

- Badge rewards for goal attainments, modelled on successful implementations in prior research (Denny, 2013)
- Points and leaderboards to drive status motivations through social comparison, consistent with findings on their engagement potential (Christy & Fox, 2014)
- Social rewards like teams and gifting points to satisfy relatedness needs, which students prioritized (Hanus & Fox, 2015)
- Email nudges to reactivate dormant users by prompting unfinished activities, an effective strategy in multiple studies (Oyibo & Adaji, 2022)

These simple gamification elements can be rapidly implemented to provide students value and kickstart participation momentum based on established motivational techniques.

5.3.2 Long-Term Intrinsic Motivation Strategies

After initial boosting, the focus should shift to cultivating habits and intrinsic motivation through deeper personalized and social gameplay, including:

- Badge collections for mastery demonstration, which provide autonomy by allowing self-directed goals (Xi & Hamari, 2021)
- Milestone privilege unlocks, which research indicates encourages lasting engagement through new discoveries (Banfield & Wilkerson, 2014)
- Cohort competitions and leaderboards enabling social comparisons known to drive participation (Mekler et al., 2017)
- Digital rewards exchanged for profile customizations, which limits the potential downsides of physical rewards (Deci et al., 2001)
- Quests tailored to user types; an immersive technique observed to sustain motivation over time (Dichev & Dicheva, 2017)

This phased strategy applies evidence-based techniques to first quickly boost activity, then focuses on habit formation and intrinsic motivations for long-term engagement.

5.4 Proposed Implementation Roadmap

A phased rollout is recommended to test and optimize tactics:

- Conduct user testing on proposed features to gather feedback on expected efficacy (Dichev & Dicheva, 2017)
- Develop an initial badge system to establish a foundational metric for participation tracking.

- Layer on social mechanics like teams and gifting to drive community building through relatedness satisfaction (Hanus & Fox, 2015)
- Gradually introduce personalization elements and intrinsic motivators once the social foundation is built.
- Leverage multi-feature releases to generate excitement and activity around growth.
- Rapidly optimize features based on engagement data to ensure maximum efficacy (Seaborn & Fels, 2015)
- Closely monitor for unintended consequences like social comparison (Christy & Fox, 2014)
- Sustain focus on motivational alignment throughout to maintain an ethical approach (Ryan & Deci, 2000)

5.5 Conclusion

This research revealed tangible opportunities for Stunited to strategically boost student engagement through phased gamification strategies tailored to motivate participation based on empirical insights into user preferences. However, sustaining an ethical, human-centric design mindset remains critical. Further mixed-methods studies should iteratively build on these exploratory findings to enrich design knowledge in this emerging domain. Overall, the proposed roadmap provides a model for implementing optimized gamification techniques grounded in motivational theories and data to increase habitual participation.

6 Limitations and Future Scope

6.1 Limitations

This initial exploratory study into optimized gamification techniques for boosting student engagement on the social media platform Stunited contains several limitations that provide opportunities for impactful further research.

6.1.1 Sampling Limitations

The small interview sample (n=10) for students poses considerable generalizability constraints, as the perspectives captured may not represent the diverse needs and preferences of broader student populations (Robinson, 2014). Student participants were limited to only two geographies (India & UK).

Expanding sampling to different geographic regions, institution types (public, private, technical, community college, etc.), academic majors in both STEM and humanities, age groups, and gamer profiles would enrich the diversity of user needs and contexts to inform enhanced generalization of findings (Dichev & Dicheva, 2017). A 2020 survey across 5,000 US students by Barnes and Noble College found significant variances in social media platform preferences and engagement motivations between genders, with TikTok, Instagram and Snapchat dominating for female students while male students favoured YouTube and Reddit (Barnes & Noble College, 2020). This highlights the need for representative sampling.

6.1.2 Methodological Limitations

The cross-sectional qualitative interview methodology offers only initial exploratory insights into student perspectives at a single time point rather than tracking how gamification impacts and perceptions evolve longitudinally (Dichev & Dicheva, 2017). As prior studies emphasize, optimizing gamification to sustain motivation requires continuous iterative improvement and adaptation based on

participation data (Morschheuser et al., 2017). More rigorous quantitative comparative experiments isolating specific game mechanics are also needed to determine the direct causal motivational impacts of elements like badges, leaderboards, social rewards, and roleplaying. Factorial testing approaches could clarify optimal configurations of gamification features (Mekler et al., 2017). For instance, an experiment comparing cooperative, competitive, and individual reward systems could identify the most effective social dynamics.

Furthermore, the reliance purely on self-reported interview data limits a deeper understanding of actual behavioural responses to gamification techniques. Direct observations of student participants interacting with gamification features could provide additional insights, as could think-aloud protocols capturing their thought processes (Krause et al., 2022). Triangulating with data sources like surveys, platform analytics, and field observations could further validate findings (Carter et al., 2014).

6.1.3 Contextual Limitations

The research explored gamification perspectives within only a single niche social media platform, Stunited. Testing proposed approaches across multiple platforms both within and beyond education would significantly strengthen knowledge regarding contextual viability and necessary customization of design (Seaborn & Fels, 2015). For instance, Xu et al. (2013) found cultural differences greatly affected social motivations and incentives; competitive approaches less suited to Chinese users.

6.1.4 Practical Implementation Limitations

As an initial exploratory study, large-scale implementation and optimization of proposed gamification techniques based on participation data were not conducted. This limits the assessment of real-world feasibility and effectiveness.

Collaborations with education and social media industry partners are crucial to execute approaches at scale and iteratively refine them based on behavioural engagement data across student populations (Dichev & Dicheva, 2017). Successfully sustaining motivation over time remains the definitive test.

6.2 Future Research Directions

Addressing the above limitations provides multiple high-value opportunities for future research that substantively builds upon these preliminary findings.

6.2.1 Broader, More Representative Sampling

Accessing much larger and more diverse student sample populations across different demographics, cultures, institution types, and academic disciplines would significantly improve generalizability (Robinson, 2014). Multi-platform studies are also essential to determine wider contextual viability (Seaborn & Fels, 2015).

6.2.2 Sampling Longitudinal, Continuous Optimisation

Long-term tracking of engagement and motivational impacts allows continuous tuning of gamification features toward optimally sustainable configurations aligned with evolving user needs (Dichev & Dicheva, 2017). Regularly assessing participation data is key to maximizing motivational affordances.

6.2.3 Mixed Methods and Triangulated Data Sources

Combining interviews, surveys, analytics, observations, and think-aloud protocols through mixed-methods approaches enables richer insights through data triangulation (Carter et al., 2014; Krause et al., 2022). This provides a more complete picture.

6.2.4 Real-World Implementation Partnerships

Collaborating with education and social media partners is crucial for executing approaches at scale and iteratively refining them based on real-world behavioural data across extended periods (Morschheuser et al., 2017). This facilitates transitioning beyond theoretical design.

6.2.5 Comparative Testing of Game Mechanics

Controlled experiments systematically comparing specific game mechanics and configurations will determine the most effective approaches. For example, A/B testing social rewards versus individual rewards (Mekler et al., 2017). This empirical testing is key.

In summary, overcoming the limitations of this exploratory research through expansive, triangulated, iterative, and longitudinal studies represent a highly promising path for substantially expanding knowledge and effective practices regarding optimized, ethical gamification strategies tailored for student social media users.

7 Chapter title (use Heading 1)

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8 Chapter title (use Heading 1)

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9 Chapter title (use Heading 1)

9.1 Section heading (use Heading 2)

9.1.1 Subsection heading (use Heading 3)

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Appendices

Whilst Heading 1 to Heading 6 can be used to number headings in the main body of the thesis, Heading styles 7–9 have been modified specifically for lettered appendix headings with Heading 7 having the 'Appendix' prefix as shown below.

Appendix A Ethical approval letter

Click [here](#) to insert your ethical approval letter as the first appendix, i.e. Appendix A.

Appendix B Appendix guidance (Appendix title (use Heading 7))

B.1 Appendix section (use Heading 8)

B.1.1 Appendix subsection (use Heading 9)

B.2 Creating captions in appendices

If you have chosen to include chapter numbers in your captions, then follow the instructions given here to apply the same format to the captions in your appendices. This section explains how to caption the figures and tables in your Appendices, assuming that Heading 7 is numbered “Appendix A” and that the Figures and Tables are going to be labelled ‘Figure A-1’, ‘Figure A-2’, ‘Table B-1’ etc.

You will have to create new, separate labels that look like the ‘Figure’ and ‘Table’ labels you used in the main body of your thesis.

1. Select the **References** tab on the Ribbon then click on **Insert Caption**
2. Click **New Label**. Type **Figure_Apx** then click **OK**
3. You now have two labels for figures, called **Figure** and **Figure_Apx**
Repeat for table captions.
4. In the **Caption** box, type your caption text
5. Click **Numbering**. Tick **Include chapter numbering** and choose **Heading 7** from the drop-down list of styles and click **OK** twice
6. Your caption should look something like this:

Figure_Apx A-1 This is the caption text for a Figure in the Appendix

7. Delete the extraneous ‘_Apx’ from the caption label so it reads:
Figure B-1 This is the caption text for a figure in the appendix.
TIP: Instead of deleting each ‘_Apx’ individually use **Find & Replace** to modify all the labels at once.

B.3 Creating Lists of Figures and Tables for Appendices

This template already includes a List of Figures and a List of Tables, however you will have to create two new lists for the 'Figure_Apx' and the 'Table_Apx' labels.

1. Place the insertion point on a blank row after the existing List of Figures
2. Select the **Insert Table of Figures** command on the **References** tab of the Ribbon
3. Set the **Caption Label** box to '**Figure_Apx**' and click **OK**
Note: Word will put a single blank line between the original list and the new list preventing it from appearing as one seamless list. However, if you select the blank paragraph between the tables you can hide it by opening the Font dialog box from the Home tab and selecting **Hidden**.
4. Click after the List of Tables and repeat for the Caption Label 'Table_Apx'.

Appendix C Appendix title (use Heading 7)

C.1 Appendix section (use Heading 8)

C.1.1 Appendix subsection (use Heading 9)