Advanced Gamification to Enhance Lifelong Learning: A Second Hybrid Implementation

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Abstract: This paper presents a second iteration of a hybrid mega-game implementation within the sixth semester "New Realities" block of a Digital Art bachelor's program at a Mexican university. Building on an earlier online-only model, this hybrid version combined mandatory face-to-face classes with optional, industry-led online sessions. Designed to mirror professional practice, the course challenged twelve students to develop professional-level competencies, visual creature design, 3D modelling, texturing, rigging, motion capture animation, and real-time video rendering for a transmedia campaign, while avoiding "crunch time" and refining self-management skills acquired in their fifth semester. Guided by Tracy Fullerton's build–test–refine playtesting cycle and Jesse Schell's Lenses framework, the implementation unfolded over three five-week periods from February to June 2025. Students earned virtual Prestige currency and experience points via the OASIS platform's economy, which accounted for 20 percent of the final grade. Three assessment tracks accommodated diverse risk and scholarship requirements: Safe Mode secured a minimum passing grade; Normal Mode relied solely on three core deliverables weighted at 30 percent each; and Hero Mode unlocked Prestige-based Easter-egg rewards and elevated grades to 100 percent. In the final six weeks, each student partnered with one of twelve real clients, negotiated scope and resources, and orchestrated project teams in roles mirroring AAA studio workflows. Voluntary surveys administered at weeks five (n = 12) and ten (n = 10) captured quantitative ratings (1–10 scales and 5-point Likert items) and qualitative feedback on instructor effectiveness, motivational shifts, and self-directed learning behaviours. After five weeks, participants reported remarkable skill gains, strong motivation driven by narrative hooks and surprise mechanics, and high approval of Discord and recorded lectures; they also flagged the need for clearer coordination among instructors and more balanced scheduling. By week ten, the remaining cohort described measurable improvements in time management, a deeper willingness to research beyond class content, and heightened confidence in applying disciplinary concepts to real-world challenges—attributes essential for lifelong learning and imminent industry entry. Although episodes of burnout and stress persisted, students increasingly attributed these to personal organization and habits rather than the game's design. These findings indicate that hybrid mega-games can simultaneously foster technical mastery and metacognitive practices. Embedding iterative playtesting into curriculum design empowers learners to assume responsibility for their own motivation and well-being. Future work should extend evaluation into the six-week mega-game simulation, examine long-term impacts on student resilience, and explore scalability across disciplines to refine hybrid gamification models that prepare students for sustained professional growth.

Keywords: Gamification, Mega-Games, Higher education, Lifelong learning, Educational innovation

1. Introduction

Gamification is increasingly recognized as a useful strategy to boost student motivation, improve skills, and foster teamwork. In a previous study, the use of mega-games in an online-only format was explored. In this document, the second iteration is described, which uses a hybrid model that combines mandatory face-to-face classes with recommended online sessions led by industry experts.

Mega-games are large-scale, interactive experiences that combine elements of board games, role-playing, and simulations, involving dozens to hundreds of participants assuming asymmetrical roles within complex scenarios. They emphasize strategy, negotiation, and dynamic narrative development, and have proven effective for educational purposes through immersive, collaborative engagement (Caudillo, 2024).

The switch to a hybrid format arises from lessons learned during the pandemic, where both strengths and limitations of remote learning were evident. The hybrid model aims to leverage the benefits of digital tools, such as flexibility and the inclusion of real-world knowledge, while maintaining the connection and interaction that face-to-face classes offer.

The previous study showed that mega-games can significantly increase student engagement; however, it also identified challenges related to scheduling and workload management. The innovative approach was designed to optimize the positive aspects and address these difficulties, creating a more balanced and attractive learning experience.

Inspired by the narrative of Ready Player One, the course uses a creative approach that connects theory to practice. Moreover, collaboration with professionals from the video game industry reinforces the relevance and

interactivity of the educational process. This approach aims to strengthen key skills such as critical thinking, self-management, communication, and collaboration, which are essential for lifelong learning.

2. Context

The implementation of this gamification and mega-game experience emerges from an evolutionary process in response to the changing conditions of higher education in Mexico. The first iteration was carried out from January to June 2022, during a period when the gradual return to on-campus classes in Mexican universities began. However, many students were residing in cities far from the campuses, making it unsustainable to require this generation of 35 participants to attend in person.

Consequently, in the following year, the implementation was conducted face-to-face at two campuses: Guadalajara and Querétaro. Although this modality fostered rich interaction, it limited opportunities for students unable to relocate, particularly those from the northern region and Mexico City. To address this issue, in the subsequent cycle additional face-to-face groups were opened in the Monterrey, Guadalajara, and Querétaro campuses, and by August 2024 a group was also established at the Mexico City campus.

The current implementation is carried out in the sixth semester of the Digital Art Bachelor's degree, specifically within the video game studies area, which spans two semesters. In the fifth semester, students learned to organize and self-manage their time through a deliberate practice diary. In this process, they set daily goals to work eight hours a day, five days a week, reviewing their accomplishments at the end of each day and reflecting on improvements for their next session. This graduated approach, progressing from daily goal-setting to a weekly format and finally to medium-term goals by semester's end, was designed to demonstrate that it is possible to develop video games while avoiding crunch time and managing time effectively. Results showed that 20% of the students reached the third level of mastery, 60% validated the competence at the weekly level, and the remaining 20% only achieved the basic level.

The self-management skills developed in the fifth semester are crucial for the current sixth-semester implementation, as students are now required to manage their time autonomously, facing direct consequences on their grades if they do not do so effectively. For this semester, the course and its activities were redesigned to clearly reflect the expected learning outcomes in a face-to-face format, which includes online elements outside regular class hours. These online sessions are optional but highly recommended and are taught by professionals with industry experience in video games who are located outside the Mexico City campus, where the class is held.

Moreover, this implementation aims for students to prepare for lifelong learning and to acquire an almost professional level in various areas of the discipline. These areas include the visual development of ultra-realistic creatures inspired by pre-existing narrative worlds, three-dimensional modelling, texturing, set-up or rigging, animation through motion capture, and the creation of real-time rendered videos focused on a transmedia campaign for social media.

The "New Realities" course is structured as a block with 24 hours of instruction and 24 hours of assignments per week, distributed over three 5-week periods, interspersed with one week during which students face short-term challenges requiring solutions in under 40 hours. In this semester, running from February to June 2025, the objective is to refine time management and achieve a balance between in-person instruction and complementary online activities, adapting to the needs and realities of sixth-semester students in the video game studies area.

2.1 Gamification in Higher Education on Hybrid Learning Models

Recent studies sourced from research databases over the last three years present a comprehensive picture of how gamification is applied to higher education, especially within hybrid learning models. Hybrid learning, which involves both online and face-to-face interactions, has prompted educators to explore gamified frameworks that support dynamic instructional designs. Thi Binh et al. (2024) offer a design science approach detailing a robust framework for incorporating gamification elements into hybrid course curricula, thereby validating positive student outcomes. Similarly, López Núñez et al. (2023) conducted a systematic review of b-learning contexts and found that integrating narrative, feedback, competition, and reward mechanisms is linked to increased student participation and motivation in higher education settings.

The practical application of gamification in hybrid learning is further underscored by Gironella (2023), who advocates for a student-centric course design that leverages motivational strategies to enhance engagement. This approach is particularly relevant in hybrid settings where a balance between traditional pedagogy and

technological tools is critical. In addition, Kosub et al. (2024) documented successful cases of integrating gamification elements within learning management systems, specifically Moodle, highlighting that thoughtful implementation leads to qualitative transformations in teaching through enhanced coaching, feedback, and interactive strategies.

Moreover, Alzahrani and Alhalafawy (2023) examine gamification through platforms such as Blackboard, identifying both motivational drivers and obstacles encountered by faculty when sustaining gamified interventions. Their work emphasizes the importance of aligning technology, pedagogical design, and gamified content to achieve long-term sustainability in hybrid learning models. Together, these studies support the notion that the intersection of gamification and higher education, particularly in hybrid environments, elevates student engagement and reinforces practical skills development and academic achievement.

Despite the widespread use of conventional gamification methods, characterized by elements like storytelling, rewards, and leaderboards, these strategies may not fully exploit the potential for deeper learning experiences. Advanced gamification techniques, such as the incorporation of mega-games, have begun to be explored to cultivate lifelong learning in higher education. Research over the past decade indicates that educational gamification can extend beyond conventional practices. For example, Franco (2022) reports an implementation in language learning for Brazilian students where popular elements like leaderboards were intentionally excluded to mitigate learner frustration, in favour of narrative techniques and tailored rewards. Similarly, Isa et al. (2022) describe the development of a mobile game-based learning application that embeds culturally relevant content and integrates a broader spectrum of game design strategies to address engagement and motivational challenges.

Collectively, these empirical studies provide a strong research basis for refining gamification strategies in hybrid learning models. They suggest that by integrating advanced gamification elements, such as mega-games, higher education can better meet the diverse needs of contemporary learners, supporting the development of both academic skills and lifelong learning competencies.

2.2 Mega-Games in Higher Education

Mega-games represent a novel trajectory in educational gamification, combining elements from board games, role-playing games, and simulations into large-scale, immersive experiences (Caudillo, 2024). Unlike conventional educational games that rely on points, badges, or leaderboards, mega-games involve dozens to hundreds of participants who assume asymmetrical roles within evolving narratives. Players engage in cooperative and competitive activities over extended periods, replicating complex real-world scenarios, such as geopolitical conflicts or economic systems, through structured rules, strategic decision-making, and resource management (Caudillo, 2024).

Empirical studies demonstrate the pedagogical value of these experiences. Caudillo's (2024) action-research investigation found that integrating advanced gamification elements with mega-games significantly increases student motivation and sustained engagement, although issues such as economic disparities and occasional burnout must be managed. Castillo and Caudillo (2024) further illustrate how role-play, interactive storytelling, and decision-making processes within mega-games catalyse deep experiential learning, fostering both cognitive and affective outcomes. Their work underscores that the scale and interactivity unique to mega-games create a dynamic environment for collaborative problem-solving and critical thinking.

Practical implementations reinforce these findings. Martínez et al. (2023) describe "Kuxtal," a mega-game designed for design students, which yielded marked improvements in collaboration, creative thinking, and real-world application skills. By situating learners in complex, simulated contexts, Kuxtal and similar initiatives demonstrate how mega-games can transcend traditional hybrid models, offering higher education a robust strategy to prepare students for lifelong learning and professional practice.

2.3 Relevant Theories in Game Design

Two foundational frameworks guided the design of this implementation: Jesse Schell's Lenses (2019) and Tracy Fullerton's Playcentric Approach (2018). Schell's Lenses present over a hundred focused heuristics that encourage designers to examine every aspect of a game from multiple perspectives, such as the lens of essential experience, the lens of the player's perspective, and the lens of the play space (Schell, 2019). By systematically applying these lenses, designers can ensure that mechanics, aesthetics, and narrative coalesce into a cohesive whole that delivers the intended emotional and cognitive experience.

Complementing this, Fullerton's playcentric methodology emphasizes iterative prototyping and empirical playtesting as the core of game development (Fullerton, 2018). In her model, each prototype undergoes cycles of testing with real players, gathering feedback on what works, what frustrates, and what delights—then refining the design accordingly. This cycle of build–test–refine not only uncovers usability issues but also reveals emergent behaviours and unanticipated learning moments.

In the current implementation, these theories converge in a three-period, five-week cycle within the "New Realities" course. At the end of each period, student complete surveys to formal playtests: they evaluate instructor effectiveness, identify which game elements or activities functioned as intended, and highlight problematic features. This structured feedback loop mirrors Fullerton's playtesting phases, allowing the design team to apply Schell's Lenses selectively, focusing each iteration on lenses most relevant to the issues raised. Over successive cycles, the course evolves responsively, ensuring that the mega-game remains immersive, pedagogically sound, and aligned with lifelong learning objectives.

3. Methodology

The study adopted Tracy Fullerton's playtesting cycle, build, test, refine, as its guiding framework. Data were gathered at the end of each five-week period within the New Realities block through an online survey completed by the twelve sixth-semester Digital Arts students specializing in video game studies. The first section of the survey evaluated instructor performance using three numerical items on a 1–10 scale: subject mastery, the degree to which the instructor challenged students to develop new skills, and the overall learning experience. Two open-ended questions then invited students to share feedback directly with the instructor and to suggest areas for improvement in confidence that their critiques would remain confidential.

In the same survey, a period review section asked students to reflect on what had gone well, what had gone wrong, and what should be improved during the previous five weeks. Students also provided comments for the course coordinator, offering insight into the overall direction of the immersive experience. During the first period, the survey included a motivational-tracking module in which students rated, on a five-point Likert scale, how motivated they felt before the semester began, during the initial five weeks, and as they looked ahead to subsequent periods. This section also probed specific elements of the experience—storytelling, the utility of Discord, game mechanics such as fun and curiosity, the innovation of challenges, the evolution of difficulty, hidden secrets, random events, communication channels, reward systems, parallel challenges, and key-collection mechanics tied to the Easter-egg reward.

Additionally, students rated their motivation for various course activities, face-to-face lectures, optional online sessions, recorded classes, upcoming challenges, key-gathering tasks, earning Prestige and experience points, extra Oasis activities, autonomous learning, and mastering new software platforms. In the second period, the survey shifted focus to deeper dimensions of student-driven learning: the extent to which participants researched beyond class content, assumed responsibility for their own progress, explored career-related topics, applied disciplinary concepts, felt confident solving domain-specific problems, engaged in situational learning, prepared for lifelong learning, and managed their learning independently in anticipation of new challenges.

Surveys were distributed at the close of weeks five and ten and were both voluntary and anonymous. Quantitative responses were analysed by calculating means and standard deviations for each item, while qualitative feedback was coded thematically into strengths, issues, and suggestions. Each period's findings informed adjustments to the course design, ensuring that the hybrid format and mega-game elements evolved in response to student data and maintained alignment with the learning objectives of fostering autonomy, collaboration, and professional-level skill development.

3.1 Course Design

The course, designed by Carlos Astengo, Lorena Martínez, and Mario Caudillo, offered an immersive experience that combined gamification elements with mega-games to cultivate collaboration skills. Its structure was inspired by the narrative world of Ernest Cline's Ready Player One, reflecting the thematic links between the novel and course content.

The 2025 version built on the successes of the original design, uniting the best practices from both implementations under the guidance of twelve instructors, coordinated by Mario Caudillo. It was organized into three modules.

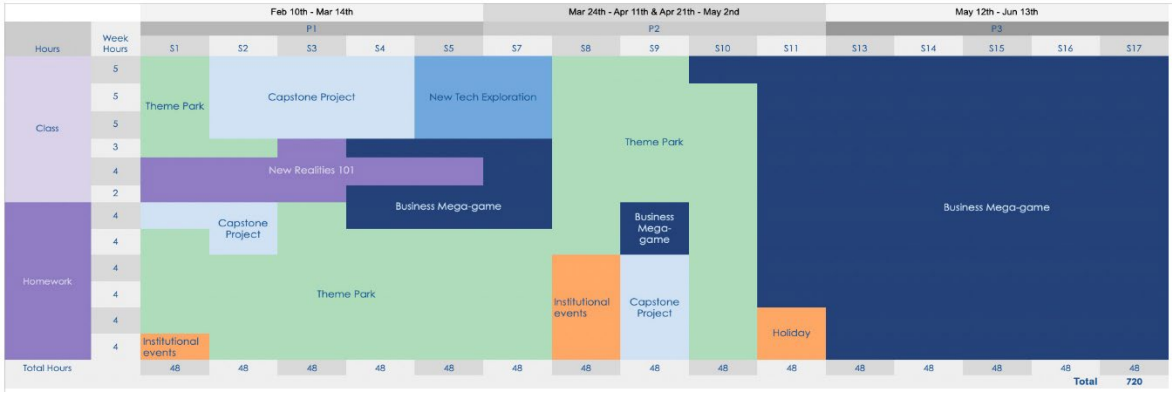

Figure 1: New Realities Course modules organization

The Theme Park Planet module emphasized professional discipline skills by challenging students to create a photorealistic creature based on existing narrative intellectual property, developing its psychology, visual design, 3D modelling, textures, rigging, and motion-capture animation for a transmedia theme-park campaign.

The Video Game Planet, shown in Figure 1 as Capstone Project, module focused on documenting and experimenting with students' capstone projects, which they continued refining over the next two semesters until submission as their final degree projects.

The Sector 18: Planet Doom module functioned as a business mega-game, simulating a professional work environment in which students assumed three distinct roles across three projects, earned virtual Prestige currency, and engaged in mechanics such as tax payments and freelance negotiation. A major difference from first implementation is that there are 12 different clients which needs to be contacted by students as producers of their own new realities game ideas.

3.2 Gamification and Mega-game Design

The OASIS platform enabled students, during the first nine weeks, to amass a virtual currency called Prestige, which governed the Mega-game's economy. As they participated, students also earned experience points that unlocked additional features. Unlike the prior implementation, the course offered three grading tracks: Safe Mode, which guaranteed a passing grade of 70 as long as deliverables were submitted on time at a basic level; Normal Mode, which excluded Prestige from the grade calculation and weighted each of the three main deliverables (Theme Park, Capstone, Planet Doom) at 30 percent each, sufficient to maintain the 90 percent threshold required for academic scholarships; and Hero Mode, the only track allowing students to earn Prestige, collect keys, and ultimately claim an Easter-egg bonus that elevated their grade to 100. In Hero Mode, the Capstone project counted for 30 percent, reflecting its role in developing individual game-design competencies and documentation skills; the Planet Doom deliverable accounted for another 30 percent, representing production skills such as scheduling, budgeting, and resource planning; and the Theme Park assignment carried 20 percent, recognizing ongoing disciplinary skill development; and finally the Prestige accounted for 20 percent of the final grade.

To simulate real-world accountability, students logged their class hours with the "/work" command within the Mega-game. Each entry triggered a notification to administrators, who could verify the activity or impose Prestige fines for false reports. In the final six weeks, the Mega-game shifted into a professional simulation: each student was paired with an actual client, conducting initial meetings to gather requirements and learn professional communication. Producers selected projects from a Job Board containing client contact details, negotiated scope, resources, budgets, payment terms, and timelines, and then presented their proposals to a board composed of three professors and the client. Upon approval, the board released 50 percent of the required Prestige, enabling the producer to recruit teammates, artists, developers, or producer-designers, in roles mirroring AAA studio workflows. Projects concluded with a formal closure and post-mortem review to assess outcomes and lessons learned, thereby reinforcing both technical skills and professional practices.

4. Results

Twelve students completed the first survey at the end of week five. Based on a 5-point Likert scale (1 = strongly disagree, 5 = strongly agree), most participants, 10 out of 12, reported remarkable gains in their skills and appreciated working alongside peers with varied perspectives. However, they also noted confusion arising from

overlapping instructions among instructors and the tight scheduling of optional online sessions, which often left little time for restful breaks or deeper focus on projects. To address these concerns, students recommended clearer guidelines for deliverables and more balanced class and online activity scheduling.

In the motivation module of the first survey, students rated their enthusiasm for the "New Realities" block as extremely high before and during the first five weeks (mean = 4.6) and remained optimistic about the upcoming period (mean = 4.7). All agreed that the storytelling elements drawn from Ready Player One stirred positive emotions and curiosity, and that Discord received a satisfaction score of 4.7 out of 5. 9 out of 12 found the surprise mechanics and prestige currency engaging, though a few expressed neutral views on specific game elements. While motivation for face-to-face sessions varied, optional online classes and recorded lectures consistently received strong approval, as did the chance to earn experience points and collect virtual keys.

By week eight, two students faced significant risk of failing and were advised to withdraw, reducing the second survey cohort to ten. These remaining students still described an overall improvement in their time management (mean self-rating increased from 4.0 to 4.5) compared to the first period yet continued to seek ways to optimize deadlines and information gathering. All ten, agreed that the mega-game format encouraged them to research beyond class content, take ownership of their learning, and explore new career-related topics. Confidence in applying disciplinary concepts and linking theory to real-world scenarios remained high, and most felt better prepared for lifelong learning and future academic challenges.

When asked about stress and burnout, several students acknowledged periods of anxiety, especially around platform transitions and team coordination. Feedback highlighted the need for deeper alignment among instructors to smooth out handoffs between course modules. Nevertheless, students praised the professional insights they gained, particularly in pipeline organization, budgeting, and client interaction, and many credited fifth semester's deliberate-practice diary with preparing them to juggle semester-long projects.

Comments to the course coordinator expressed gratitude for the immersive experience and the chance to work with industry-seasoned professors. Students recommended earlier communication about extra online sessions and finer coordination of platform workflows to prevent bottlenecks. Despite these challenges, the overall sentiment was one of pride in their accomplishments, increased motivation for autonomous learning, and confidence in applying their newly acquired skills.

5. Conclusions

The findings from both surveys demonstrate that embedding a hybrid mega-game within a face-to-face block can meaningfully boost student engagement, self-management, and professional readiness. After five weeks, all twelve participants reported strong motivation driven by narrative hooks, surprise mechanics, and a flexible blend of in-person and online sessions. At the same time, they highlighted the need for clearer coordination among instructors and more balanced scheduling to prevent workload bottlenecks.

By week ten, the ten remaining students described measurable improvements in their time management, a deeper willingness to research beyond class content, and heightened confidence in applying disciplinary concepts to real-world tasks. These two abilities, independent inquiry and practical application, are vital for preparing students for lifelong learning and will prove indispensable when they join the industry in a year's time.

This iteration built on the previous online-only model by offering three assessment tracks, Safe, Normal, and Hero, that accommodate different risk tolerances and scholarship requirements. Assigning each student a distinct client project demanded professional communication, scope negotiation, and resource planning. The playtesting framework ensured that each five-week cycle responded directly to student feedback, keeping the experience both immersive and pedagogically sound.

Together, these design choices reinforced essential lifelong-learning skills such as critical thinking, self-direction, and collaboration, while guiding students toward near-professional mastery in creature design, 3D modelling, rigging, motion capture, and real-time rendering.

In both the online-only and the hybrid implementations, students reported episodes of burnout, anxiety, and stress. Yet whereas participants in the first iteration attributed these feelings to the mechanics of advanced gamification and the scale of the mega-game, in the hybrid model they instead cited personal factors such as time management, goal setting, and healthy habits. This shift, from externalizing pressure to owning one's role in sustaining motivation, underscores a maturation in student self-awareness. It suggests that, by embedding structured reflection and iterative playtesting into the curriculum, learners are better equipped to recognize and address their own challenges rather than blame the implementation's design.

Such self-regulatory skills, taking responsibility for one's workload, planning, and seeking balance between ambition and well-being, are crucial for lifelong learning. As these students prepare to enter the industry within a year, their capacity to monitor stress levels, adapt their strategies, and maintain resilience will be as important as any technical competency. In this way, the hybrid mega-game not only advances disciplinary mastery but also models the self-directed, reflective practice that drives sustained professional growth.

5.1 Implications for Future Implementation

Because this paper focuses on the advanced gamification phase and the preparatory work leading into the mega-game, it captures only the first half of the semester's hybrid experience. Future implementations should extend the evaluative framework to include the six-week mega-game simulation, using the same quantitative and qualitative instruments to measure outcomes such as collaborative problem-solving, professional role competence, and client-interaction skills. Tracking those final weeks will reveal whether early gains in motivation, autonomy, and time management translate into sustained engagement and effective project delivery under simulated industry pressures.

Moreover, longitudinal research is needed to assess lasting effects on student well-being and professional readiness. While participants in this hybrid model assumed responsibility for stress and burnout, an encouraging sign of self-regulation, it remains unclear how the intensity of the mega-game impacts resilience over time. Future studies might incorporate periodic well-being check-ins, reflective journals, or physiological stress metrics to balance ambition with healthy habits.

Finally, scaling this approach across different disciplines and institutional contexts will test its generalizability. Researchers and practitioners should explore variations in narrative themes, client-project structures, and assessment tracks to identify the core design principles that drive deep learning. By closing the loop on the full implementation—from advanced gamification through to mega-game completion—educators can refine hybrid models that not only equip students with near-professional technical skills but also focus in the reflective, self-directed practices essential for lifelong learning.

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