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Reimagining Bharatiya Wisdom for Digital Natives: An Analytical Study of Culture-Based Gamification for Positive Mindset, Resilience, Values, and Well-Being among Gen Z and Gen Alpha

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Abstract:

This paper provides a critical assessment of the use of culture-based gamification to connect Bharatiya wisdom traditions to the learning styles of Gen Z and Gen Alpha. Since there are no large-scale verified studies of the full "Bharatiya wisdom gamification" approach, this paper will employ a synthesis approach with secondary sources instead of creating participants and outcomes. Evidence for this paper will be drawn from recent educational meta-analyses of gamification, research on heritage culture games, Indian school-based yoga studies, and a 2024 systematic review on Generation Alpha. In recent gamification meta-analyses, some design types have been shown to have positive average effect sizes on engagement and learning. Some ESL yoga interventions with Indian youth have been shown to improve stress and attention. Cultural Heritage Games have also been studied and have found that knowledge acquisition is supported through the use of narrative, player immersion, and game interactions. In this paper, Bharatiya concepts are used to design systems that support social interaction and provide players with feedback on their quests in a non-competitive, collaborative, and constructive manner. The use of concepts based on Bharatiya Gamification shows that these systems are potentially useful, and should continue to be studied to assess the constructs of resilience and virtues, but currently, a causal relationship has not been shown. This paper also supports the creation of an experiment-based research agenda that focuses on multiple systems within the pluralistic framework for age specific implementation.

Keywords: Bharatiya wisdom, gamification, Generation Z, Generation Alpha, resilience, well-being, Indian Knowledge Systems

1. Introduction

Highly interactive digital learning systems plant the foundation for the future-forward education of native learners. Yet the presence of these systems should not lend credence to the belief that an entire generation has a preference for the same style of learning. A 2024 systematic review of the education of Generation Alpha studied 2,093 articles and consolidated 83. It concluded that technology integration in education has begun to take center stage, but that the "distinctive characteristics" of different generations

remain under-researched (Höfrová et al., 2024). Concerns of this nature should be prioritized for the education of Indian learners. Innovations should be steered by empirical data, and not by uncritical beliefs.

Meanwhile, the Indian National Education Policy 2020 focuses on holistic development and includes an emphasis on ethics, values, and human and constitutional duties, as well as resilience, experiential learning and the use of technology within the framework of Indian knowledge systems (Ministry of Education, 2020). Within the Indian Knowledge Systems (IKS) Division, established in 2020, the Ministry has begun to institutionalize the research and education of Indian knowledge systems. These changes have created a genuine educational problem: how can we build digitized experiences that incorporate cultural content without losing their value?

One potential answer is gamification. Generally, in gamification, learning or motivation improvements are observed in a positive direction, but improvement is often context-dependent. The heterogeneity of the results is evident even in meta-analyses (Bai et al., 2020; Li et al., 2024; Shi & Shih, 2023; Sailer & Homner, 2020). Cultural heritage research supports the use of serious games paired with or embedded within tangible, virtual or augmented reality (AR) interactions and digital stories that present heritage in a meaningful way through embedding it in a task rather than providing heritage as passive, context-less information (Kara, 2022; Marques et al., 2023; Nofal et al., 2020). Within this context, this study proposes to integrate Bharatiya wisdom with gamification to enhance positive mindset, resilience, values and well-being and proposes to distinguish existing evidence from a proposed design framework.

2. Review of Literature

While the research on educational gamification is promising, it is not entirely consistent. Sailer and Homner (2020) reported significant effects on cognitive ($g = 0.49$), motivational ($g = 0.36$) and behavioural ($g = 0.25$) outcomes. Bai et al. (2020), by synthesizing 30 independent interventions with 3,202 participants, found a learning effect of $g = 0.504$. Finally, a 2022 meta-analysis reported achieved effects of 0.85 on gamified learning and of 0.77 on motivation, whereas Shi and Shih's (2023) meta-analysis based on 49 samples and more than 5,071 participants, estimated an overall effect of $g = 0.822$. Lastly, Li et al. (2024) found a lower effect on the intrinsic motivation of $g = 0.257$, but stronger effects of $g = 0.638$ on autonomy and $g = 1.776$ on relatedness. Overall, gamification can have positive effects; however, the importance of a well-thought design offers us a reminder against uncritical positivity, and a well-informed dismissal.

This is important for values and well-being. For example, reward-focused systems can undermine reflection. The 2023 systematic review on gamified motivation reported points, badges and rankings as common, but emphasized that the integration of learning mechanics is key, and that motivation depends on how mechanics are integrated into learning (Manzano-León et al., 2023).Citing gamification literature, tailored scholarship encourages fitting mechanics with characteristics of learners.

This article presents a second strand: Indian contemplative practices. A 17-session school based yoga program was implemented across 24 schools (Chennai & New Delhi) and reported significant reductions in stress scores of students (adolescents) compared to the health education control (mean difference 5.11,

95% CI 4.78 – 5.36, p = .001). Negative impacts on stress were reported, as were improvements in various health indicators and attention, following the yoga program (Ranjani et al., 2023). D'Souza et al. (2021) reported that Yoga Nidra reduced psychosocial stress in school going adolescents after 21 days. Anusuya et al. (2021) in a randomized trial of 60 students, reported improvements in anxiety, mind wandering, mindfulness and cognitive performance following a yoga based relaxation technique.

The third strand is based on cultural heritage/heritage learning. Nofal et al. (2020) demonstrated tangible gamification for learning in museum settings; Kara (2022) reported improved post-test and delayed knowledge; and Souropetsis et al. (2023) reported improved learning and perceived competence, in a gamified cultural heritage VR learning environment. Although these studies do not validate Bharatiya wisdom gamification, they demonstrate the potential of cultural knowledge within well-designed interactive systems.

3. Research Methodology

This study undertakes a structured secondary quantitative and conceptual synthesis. No original sample of Gen Z or Gen Alpha was created. Within the 2020-2025 sources, evidence was retrieved from four domains: educational gamification meta-analysis; Generation Alpha/Gen Z education, cultural heritage game-based learning; and Indian adolescent yoga/relaxation interventions. Official Indian Policy documents were the foundation for the definition of holistic learning, values, resilience, technology and IKS (traditional/indigenous knowledge systems) within the educational framework.

Quantitative synthesis does not amount to a new meta-analysis since the studies published use different outcomes, populations and different definitions of effect sizes. No attempt is made to pool reported Hedges' g or standardized effects. For school-based yoga studies, only statistics as published are included. The Generation Alpha review is documented herein under its published theme counts: teacher role (18 studies), new approaches (12), teaching tools (43), and blended/online learning (10).

The conceptual part of the design outlines educationally defensible Bharatiya constructs of self-regulation through yoga practice, reflective and ethical reasoning, Seva-oriented prosociality and welfare, narrative wisdom, and holistic well-being, and associates these constructs to the design of quests, branching dilemmas, feedback, progress visualization, and collaboration. "Bharatiya wisdom" is considered herein to be plural intellectual and cultural traditions and not a unitary religious doctrine. Consequently, the proposed design is a hypothesis rather than a causal explanatory model that has been empirically tested.

Table 1. Evidence streams included in the analytical synthesis

Evidence stream	Representative 2020–2025 source	Use in this paper
Educational gamification	Bai et al. (2020); Shi & Shih (2023); Li et al. (2024)	Learning/motivation effect sizes
Gen Z / Gen Alpha education	Höfrová et al. (2024)	Learner/context framing
Indian adolescent well-being	D'Souza et al. (2021); Ranjani et al. (2023)	Stress, attention and self-regulation evidence

Cultural heritage games	Nofal et al. (2020); Kara (2022); Marques et al. (2023)	Cultural learning design evidence
Indian policy / IKS	NEP 2020; IKS Division	Normative and curricular context

Source: *Author synthesis from verified sources; no synthetic participant dataset was created.*

4. Results and Data Analysis

Quantitative data shows that gamification has the potential to make meaningful contributions to education, but effect size varies greatly. Within the major syntheses included in this study, standardized effects for behavioral learning in Sailer and Homner (2020) show an effect size of 0.25, while Shi and Shih (2023) show an effect size of 0.822 for overall learning. Li et al. (2024) provided a relevant motivational decomposition and found that intrinsic motivation increased by g = 0.257, whereas autonomy increased by g = 0.638 and relatedness increased by g = 1.776. Based on these results, one would assume that gamification's effect on culture should not be measured by the scores themselves, but through the social bonds and the perceived choice.

The moderator evidence supports this assumption. Shi and Shih (2023) found g = 1.293 for learners in elementary school, g = 0.014 for learners in secondary school and g = 0.869 for learners in higher education. These subgroup estimates should not be seen as fixed class traits, as the studies included in this review were different in subject matter, length and design. In this case, age was not associated with good gaming. Their review also found that the integration of mechanics, dynamics and aesthetics resulted in stronger effects than more focused designs, thus supporting an integrated narrative-experience model.

Table 2. Reported effects from recent gamification meta-analyses

Study / outcome	Participants / evidence base	Reported effect
Sailer & Homner (2020): cognitive	N=1,686; k=19	g=0.49 [0.30, 0.69]
Sailer & Homner (2020): motivation	N=2,246; k=16	g=0.36 [0.18, 0.54]
Bai et al. (2020): learning	30 interventions; N=3,202	g=0.504 [0.284, 0.723]
Yu (2022): achievement	Meta-analysis	ES=0.85 [0.32, 1.37]
Yu (2022): motivation	Meta-analysis	ES=0.77 [0.53, 1.01]
Shi & Shih (2023): overall	49 samples; N>5,071	g=0.822 [0.567, 1.078]
Li et al. (2024): intrinsic motivation	35 interventions; N=2,500	g=0.257 [0.043, 0.471]
Li et al. (2024): autonomy	Same review	g=0.638 [0.139, 1.136]
Li et al. (2024): relatedness	Same review	g=1.776 [0.737, 2.814]

Source: *Values reproduced from the cited meta-analyses; effects are not pooled again in this paper.*

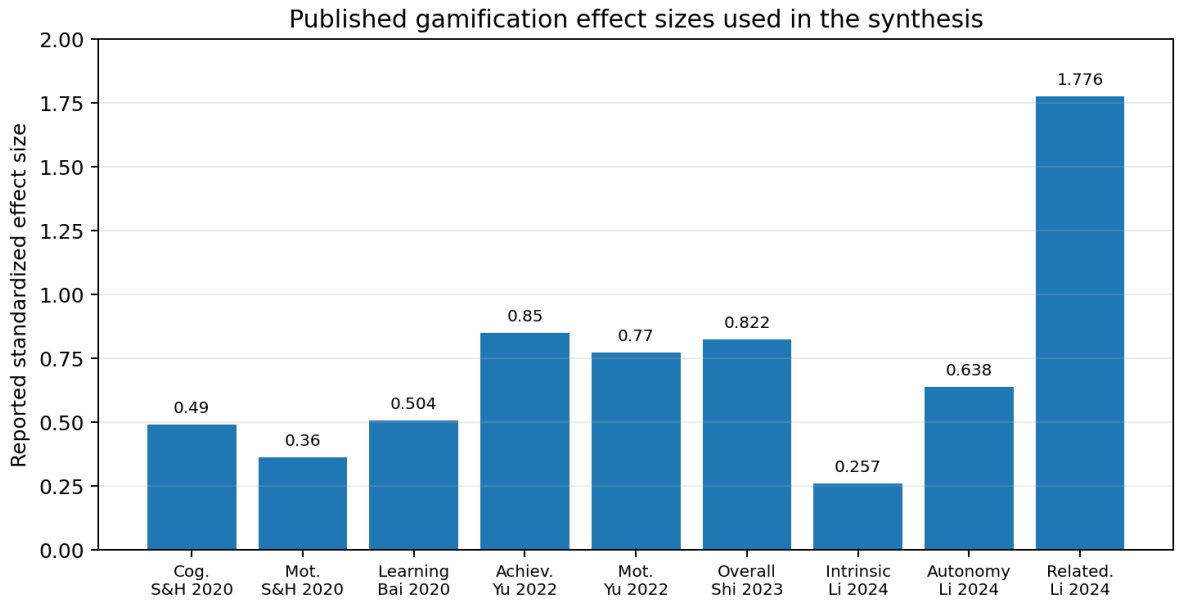

Figure 1. Published standardized gamification effects included in the synthesis. Sources: Sailer & Homner (2020), Bai et al. (2020), Yu (2022), Shi & Shih (2023), Li et al. (2024).

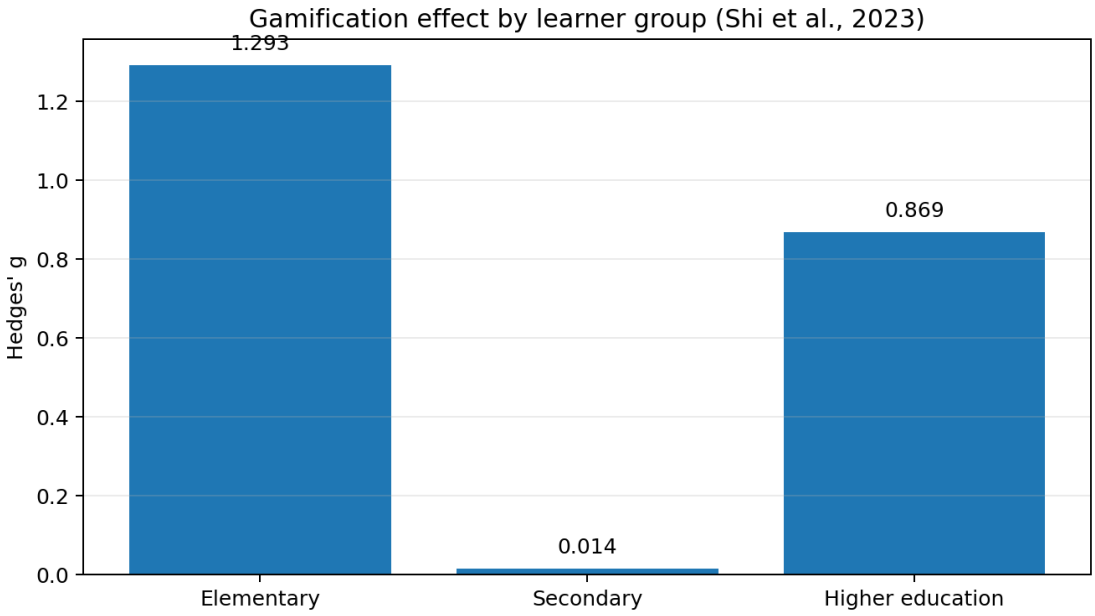

Figure 2. Gamification effect by learner group reported by Shi and Shih (2023).

There are some examples of well-being and culturally situated learning, but these examples are more limited. Ranjani et al. (2023) have the strongest Indian adolescent trial in the synthesis: After a large school-based program, there was a significant adjusted reduction in stress by 5.11 points in the education-only control group. In D'Souza et al. (2021), the post-intervention Yoga Nidra group consisted of 96.15% of students in the low-stress group and 3.85% in the moderate-stress group, compared to 58.06% and 41.93%, respectively, in the control group. Though these studies show that structured yoga practices can be a positive well-being practice, there is no evidence that gaming or gamifying yoga would be more effective.

The review of Generation Alpha shows a directed effort for digital design towards tools for teaching rather than teaching methods, or new integration of or blended learning (Höfrová et al., 2024). This suggests that it is reasonable to incorporate interactivity, but advises against a over reliance on technology. Cultural heritage studies suggest that serious games are more credible if cultural elements are embedded in scenarios that require collaboration and make decisions in an authentic context, rather than serving as mere decoration (Kara, 2022; Marques et al., 2023; Nofal et al., 2020).

Table 3. Generation Alpha education review themes

Theme	Number of studies	Share of 83 studies (%)
Role of teachers	18	21.7
New approaches to education	12	14.5
Teaching tools	43	51.8
Blended/online learning	10	12.0

Source: *Höfrová, Balidemaj, and Small (2024). Shares calculated from published theme counts.*

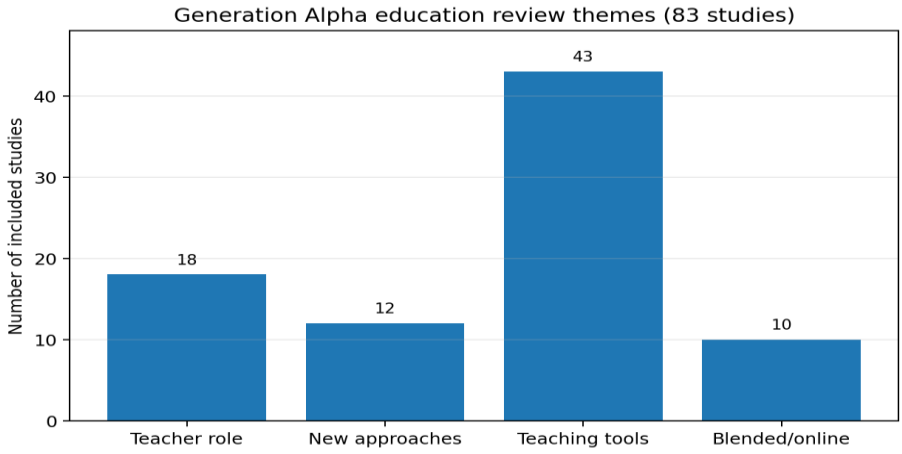

Figure 3. Distribution of themes in the Generation Alpha education review. Source: Höfrová et al. (2024).

Table 4. Indian adolescent well-being evidence used in the synthesis

Study	Design/sample	Verified result used
Ranjani et al. (2023)	Cluster RCT; 2,000 adolescents; 24 schools	ADOSS reduction difference 5.11, 95% CI 4.78–5.36, p=.001
D'Souza et al. (2021)	21-day experimental Yoga Nidra study, ages 14–16	Post-test low stress 96.15% intervention vs 58.06% control
Anusuya et al. (2021)	Randomized trial; 60 students ages 14–16	Improved anxiety, mindfulness, mind-

		wandering and cognitive task outcomes

Source: *Original published results; no new effect sizes were calculated.*

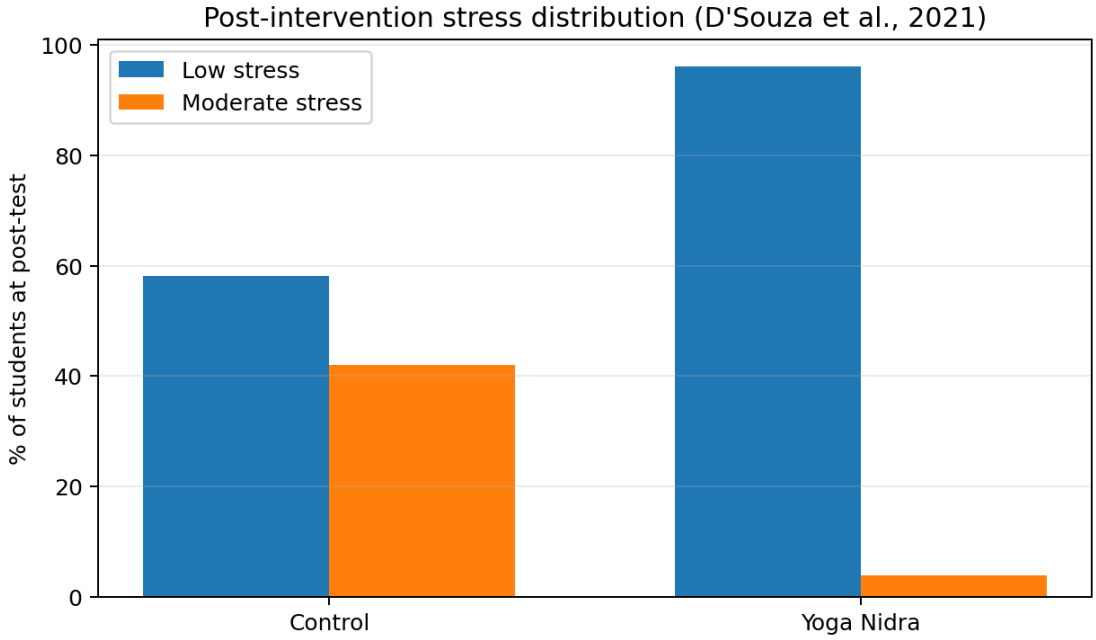

Figure 4. Post-intervention stress-category distribution in the Yoga Nidra study. Source: D'Souza et al. (2021).

5. Discussion

The synthesis endorses an alternative definition of "culture-based gamification." The strongest model is not a layer of points and badges superimposed on classical texts. The strongest model is placed within an instructional design framework. It engages learners with cultural narratives that pose dilemmas, decisions, and reflections. Consider a Panchatantra-based quest that poses multiple decisions, and requires the learner to defend and explain the consequences of trust, responsibility, and collective concern. A volunteer-centered mission framework may endorse collaborative, verified contribution, while other missions may emphasize individual competition. The focus on yoga-based self-regulation may include reflection journals that provide constructive feedback on the process without transforming the reflection practice into a competitive evaluation.

This distinction aligns with existing motivational evidence. Li et al. (2024) argue that gamification may be more effective in facilitating autonomy and relatedness than intrinsic motivation. As such, the priorities for values and well-being should focus on the meaningful vector of autonomous, cooperative effort that is non-competitive and coupled with feedback. Competition is appropriate for recall, but may be ineffective and counterproductive for decisions and servant concern. Bai et al. (2020) also identified responses that were positive (enthusiasm, feedback, and goal setting), and negative (anxiety and jealousy) to gaming and simulation.

This approach is appropriate within the Indian policy context. NEP 2020 connects holistic education and ethics, resilience, and experiential learning to technology, while the IKS Division supports research and dissemination of Indian knowledge systems (Ministry of Education, 2020; IKS Division, 2020–2025). However, policy support is not evidence of the effectiveness of these outcomes. Claims that Bharatiya wisdom instills resilience and moral conduct should not be endorsed unless the practices are clearly defined and researched.

Gen Z and Gen Alpha require individualized design. There is more developed Gen Z research in higher education, while Gen Alpha research is still emerging. Höfrová et al. (2024) also emphasize that generational differences are more often assumed than proven. Design that is consistent with age should be based on developmental level, literacy, access to and familiarity with digital learning environments, classroom context, and needs of the learner. Younger learners would benefit from story-based cooperative tasks. Older learners would benefit from dealing with ambiguity and ethical issues through reflective dialogue.

Finally, something needs to be said about the issue of cultural validity. Bharatiya knowledge is internally diverse in many ways such as language, region, philosophy, community and social customs. An authentic knowledge platform should indicate sources, distinguish between historical and contemporary interpretations and adaptations, present multiple interpretations and avoid providing dubious interpretations as if they are valid and legitimate. This pluralism is not a limitation; rather it can become a game mechanic.

6. Recommendations and Implications

As a first step, implementation needs to be done on a small scale and in modular form. Each of these small implementations should focus on one cultural phenomenon and include one measurable learning or well-being outcome and one hypothesized mechanism. Designers should favor narrative quests, cooperative missions, reflection, and feedback with goals toward mastery through the designed system; this should be done over excessive extrinsic rewards. Content review panels should include topic scholars, educators, and psychologists as well as people familiar with regional traditions. Trials should use pre-registered outcomes and comparison groups as well as validated measures of resilience, well-being, values reasoning and engagement. Analysis and interpretation of data should be done separately for Gen Z and Gen Alpha, rather than using them both as ‘digital natives’. Effectiveness of educational methods and design in both groups should be studied together with the burden of screen time and other Ethical issues.

Table 5. Proposed mapping of Bharatiya content to gameful learning mechanics

Cultural/educational construct	Gameful translation	Intended outcome	Design safeguard
Reflective ethical reasoning	Branching dilemmas and consequence maps	Values reasoning	Allow multiple justified perspectives
Seva / prosocial responsibility	Cooperative community quests	Relatedness and prosociality	Avoid competitive scoring of altruism

Yoga-based self-regulation	Guided practice + reflective progress log	Stress management / attention	No leaderboard; evidence-based dosage
Narrative wisdom traditions	Story quests and character decisions	Meaning-making and cultural literacy	Source attribution and contextual notes
Plural IKS inquiry	Comparative evidence quests	Critical thinking and cultural curiosity	Distinguish history, interpretation and belief

Source: *Proposed framework based on the evidence synthesis; not an empirically validated intervention.*

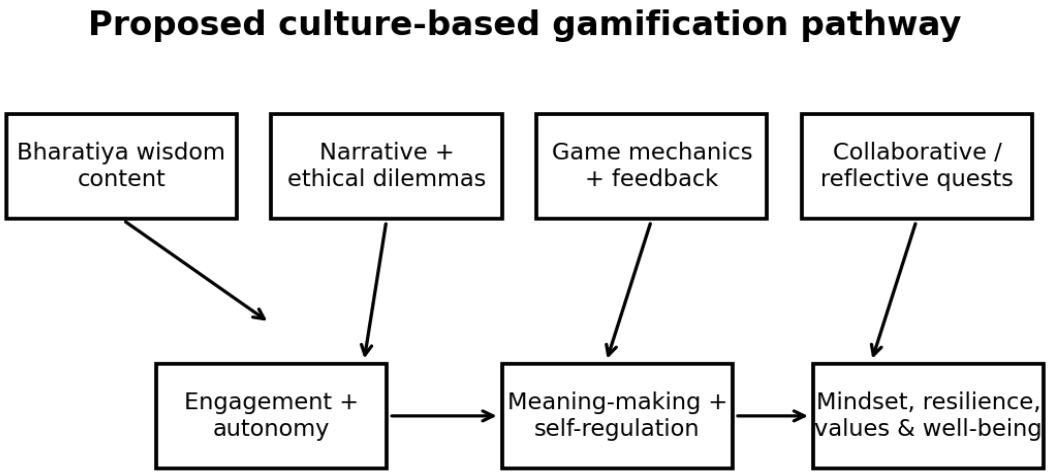

Figure 5. Proposed Bharatiya wisdom–gamification–outcome framework (conceptual, not yet validated).

6.1 Limitations and Research Priorities

The synthesis has four important limitations. First, the quantitative evidence streams are adjacent rather than identical to the proposed intervention. Gamification Meta-analyses spanning multiple subjects and countries; yoga studies focusing on the effects of specific mind–body practices; and cultural heritage studies focusing on interactive heritage and learning all provide evidence gaps. None of these evidence gaps demonstrates that a combined Bharatiya wisdom gamification program will increase resilience, values or wellbeing. Therefore the framework outlines an evidence-informed hypothesis rather than a pooled treatment effect.

Second, the reported gamification effect sizes are heterogeneous. Differences in subject, intervention length, comparison conditions and measurement outcomes of the outcome of interest mean that the largest effects ought not to be regarded as expected effects of a future Indian program. The very large relatedness estimate reported by Li et al. (2024) is informative about social mechanisms and should be interpreted with study heterogeneity, the confidence interval and the study's overall findings. Similarly,

the subgroup estimates reported by Shi and Shih (2023) are descriptive moderator results; they should not be misconstrued as demonstrating that elementary learners are more responsive compared to adolescents.

Third, generational labels mask developmental and socioeconomic differences. A 13-year-old and a 24-year-old may both be described as digital-native cohorts in popular discourse and may have changed cognitive and social dimensions as well as educational means. Indian learners also vary in school type, disability, region, household and individual resources. Given this, it is essential that the evaluation reports actual age and educational level and not rely on Gen Z and Gen Alpha.

Fourth, the process of cultural adaptation carries risks of oversimplification, exclusion and authority bias. Digital platforms should not represent one single strand of Bharatiya knowledge as the only or the most complete presentation of this diversity. Transparency of sourcing, review by multiple experts, learner feedback and the opportunity to question or compare different interpretations are some safeguards that are needed. Prior to evaluating the effect of the intervention, future research should conduct studies to assess the content validity. This should be done alongside research of a strong quasi-experimental or randomized nature to assess the intervention's intended benefits and potential adverse impacts, including performance pressure, disengagement, cultural alienation and excessive screen time. These adverse impacts should be measured to help counter their frustrating effects. In the process of developing a culturally safe and appropriate intervention for Indian classrooms, multiple case studies should be conducted. Interviews consisting of open-ended questions should be conducted after the outcome measures. These interviews should assess why certain gaming mechanics are motivating or exclusionary to learners. All of this serves to answer why certain narratives are confusing, motivating or exclusionary to learners, and helps further develop the intervention.

7. Conclusion

Based on the culture-based gamification evidence currently available, educational gamification can be viewed as a valid evidence base for gamification. Research on the effect of Indian school based yoga has demonstrated benefits that are specific to reducing stress and improving attention. Additionally, since the evidence from culturally based heritage games suggests that digital games can enhance learning of heritage, there is a solid evidence base for incorporating Bharatiya wisdom into gameful learning environments.

The most important design principle is integrity in translation. Concepts related to culture should be represented as meaningful narratives, collaboration, reflection, and engagement instead of being used as decorations for generic rewards. The pathway of Bharatiya content, culturally contextualized narratives, game mechanics, interactivity, reflection, and collaboration should be treated as a working hypothesis that can be tested. The follow-up research should move to the delimited-evaluation phase from the excited-innovation phase. The question to be answered is not whether "tradition" or "technology" is superior, but which specific contents, mechanics, users, and contexts yield measurable and ethically defensible outcomes.

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Internal Validation Note

Main-text word count: 2450 words. Number of tables: 5. Number of figures/graphs: 5. Number of references: 17. Primary reference period: 2020–2025. Research design: secondary quantitative and conceptual evidence synthesis. Principal data sources: recent gamification meta-analyses, Generation Alpha systematic review, Indian school-based yoga trials, cultural-heritage game studies, NEP 2020 and IKS policy sources.