

OPEN ACCESS

Manuscript ID:  
EDU-2026-140210011

Volume: 14

Issue: 2

Month: March

Year: 2026

P-ISSN: 2320-2653

E-ISSN: 2582-1334

Received: 16.01.2026

Accepted: 23.02.2026

Published Online: 01.03.2026

Citation:

Wang, K., Darodiat, T.A., & Rattanapun, S. (2026). Gamified Teaching Enhancing Joyful Learning and Student Well-Being in Yunnan. *Shanlax International Journal of Education*, 14(2), 182–194.

DOI:

<https://doi.org/10.34293/education.v14i2.10011>



This work is licensed under a Creative Commons Attribution-ShareAlike 4.0 International License

# Gamified Teaching Enhancing Joyful Learning and Student Well-Being in Yunnan

**Kaishu Wang**


*Rajamangala University of Technology Krungthep, Thailand*

**Tubagus Achmad Darodjat**

*Rajamangala University of Technology Krungthep, Thailand*

**Supot Rattanapun**

*Rajamangala University of Technology Krungthep, Thailand*

 <https://orcid.org/0009-0004-4513-0455>

## Abstract

*This study aimed to examine how gamified education can affect junior high school students' enjoyable learning and psychological well-being, focusing on the mediating role of learning motivation. A four-week gamified educational intervention was employed to enhance students' learning engagement and experience using points, badges, levels, and cooperation. We conducted a quasi-experimental study with first-grade students at primary schools in Kunming, Yunnan Province (N=60) by performing classroom observations and semi-structured interviews on perceived pedagogical climate, motivation to learn, and health. Descriptive statistics, paired-samples t-tests, quantitative analyses, correlation analysis, and bootstrapped mediation analysis were used. Qualitative data were analysed using thematic content analysis. The findings revealed that gamification in education enhanced learning pleasure and boosted learners' motivation, class participation, and achievement feelings. The general well-being of students in the experimental class improved dramatically, especially in terms of their sense of purpose in learning, sense of belonging, and pleasure with the classroom. Mediation analysis suggested that learning intention significantly mediated the relationship between game-based instruction and students' health, suggesting that feeling happy and motivated is an important psychological tool. Qualitative research confirms this, as students describe the gamified classroom as a more interactive, cooperative, and inspirational place. The results suggest that gamified education improves students' mental health by increasing classroom pleasure, stimulating active learning motivation, and facilitating good emotional experiences. This study has significant implications for the design of emotionally responsive teaching and educational practices that can be used to improve student learning motivation. Future studies should verify and expand on the theoretical framework by testing the long-term sustainability of gamified learning outcomes, larger sample sizes in various educational situations, and by testing other mediating and moderating factors such as teacher facilitation tactics, digital ability, and socio-emotional talent.*

**Keywords:** Gamified Teaching, Joyful Learning Experience, Gamification in Education Well-being, Learning Motivation, Innovative Teaching

## Introduction

In recent decades, secondary school education in China has changed from focusing mainly on imparting knowledge to stressing all-around development for teenagers. Competency-based instruction and the growing importance of emotional learning and student wellness. Social and emotional learning and positive psychology, all of which emphasise student motivation, engagement, and mental health, are central educational objectives ([Rampersad & Gentner, 2024](#)). Currently, in the field of education, researchers understand that learners' affective states can influence them while they learn ([Kizilcec et al., 2017](#)). academic persistence and long-term educational outcomes ([Guo et al., 2025](#)). In the process of continuously reforming the Chinese educational system,

gamified education has become an important innovation in teaching methods. Gamification refers to the intentional use of game design within non-gaming contexts to increase learners' desire to learn or engage with a given subject (Jin et al., 2024). Recent empirical syntheses and meta-analyses have shown that gamified instruction enhances students' motivation, engagement, self-efficacy, and learning satisfaction at different educational levels (Huang et al., 2020). Gamified teaching encourages active participation and learner-centred activities during classes, in contrast to passive learning. (Thongmak, 2019)

In addition to the effects of instruction on cognition and behaviour, some interest has recently focused on affective learning. (example, educational psychology findings suggest that positive success feelings, such as joy, interest, and flow, enhance the quality of learning, cognitive flexibility, and perseverance. According to the broaden-and-build theory, positive moods widen individuals' thought-action repertoires and facilitate the building of enduring personal resources, enhancing resilience and adaptive learning behaviours. Emotionally supportive classrooms have also shown to promote students' subjective wellbeing and lifelong engagement in academics.

All of these issues have particular significance for the teaching of students at the middle school level, which is marked by heightened educational expectations and testing and increased vulnerability towards peers and teacher-student relationships. If left unaddressed, it could negatively affect motivation, engagement, and emotional well-being (Kotera & Ting, 2021). These reasons lead teachers and schools to seek pedagogies which enhance participation, pleasure, and students' well-being. Gamification is considered in the latter sense to build affective and stimulating contexts (Carcelén-Fraile, 2025).

Although research on gamified teaching is growing rapidly, there are still a number of important gaps. The available literature has mainly focused on cognitive and behavioural outcomes, including academic performance, engagement, and participation. The affective experiences of students, especially the joy of learning and psychological

well-being, have not been well researched (Alahmari et al., 2023; Chan & Lo, 2024). Second, there is still little empirical evidence on the middle school level, yet this is the developmental stage that can be crucial in terms of both the emotional and motivational development of students. Third, despite theoretical frameworks, such as Self-Determination Theory, indicating that gamification can be used to promote well-being through motivational processes, the underlying mechanisms, particularly the mediating effects of learning motivation and joyful learning, have not been sufficiently studied within combined empirical frameworks. Thus, an empirical study with a theoretical basis that focuses on studying gamified teaching, learning motivation, joyful learning, and student well-being in practice in a real classroom setting, especially in underrepresented areas such as Yunnan, China, is evident.

A theory-based account of such processes is provided by self-determination theory (SDT), which holds that can satisfy autonomy, competence, and relatedness needs to promote learning motivation and well-being (Gagn'e et al., 2022). Note here how the concepts highlighted above in gamified teaching, such as learner's choice, optimal challenge, instant feedbacks and social interaction have the same view. As such, gamified teaching can improve the learning motive, provide a pleasant learning experience, and eventually lead to increased students' feelings of happiness. However, there seems to be little empirical support for such a foreseen mediation process, which requires further research.

This study examined how gamified teaching affects students' positive learning experiences and well-being through their learning motivation as a mediating variable. This experiment was conducted at a middle school in Kunming, China (Yunnan Province), and contributed real data from marginalised settings. The aim of this study was to develop reinforcement theory studies, taking into consideration ideas about positive psychology and motivational theories. In addition, concrete suggestions are provided on how teachers can develop emotional safety and interest in the classroom environment.

## Research Objectives

- Investigated how gamification in teaching impacts middle school children's experience of fun.
- Investigating the impact of gamified teaching on students' health.
- Learning motivation was examined as a mediator between gamified education and well-being.

## Literature Review

In this study, we used Self-Determination Theory (SDT), Flow Theory, Zone of Proximal Development (ZPD), and Cognitive Load Theory (CLT), and identified gamification design models such as MDA and Octalysis. Theoretical discussion progresses towards exploring the role of enjoyable learning for education, an emotional mechanism that is related to the motivation for learning.

## Empirical Studies on Gamified Instruction and Joyful Learning Experience

Although the concept of pleasure in learning is relatively novel, affective terms such as fun, interest, engagement, and accomplishment have long been considered important for the quality and persistence of learning (Sun et al., 2024). We consider these affective aspects to be known, at least implicitly, from the recent literature on education which considers them markers of educational achievements. Worldwide, studies have shown that gamification in education leads to pleasurable affective experiences during learning (Li et al., 2023). The addition of gamification elements such as feedback, rewards, varying difficulty level challenges, and progression mechanisms increases enjoyment, which satisfies and motivates the player (Vosiqova & Khadjibayeva, 2024). The improvement in academic results was not statistically significant in all cases. Students who learn with games report that they have an overall better learning environment and mental health than those who learn without them (Camacho Sánchez et al., 2022). This suggests that pleasure is one of the criteria students use to evaluate classroom quality. Research conducted in the Chinese environment corroborates these findings. Research has shown how game playing and task-based learning can increase students' interest in studies, make them

enjoy the process more, and make them feel that they learn more. The methods used varied between studies. In China, there is a tendency for positive affective results related to game-based instruction. According to previous research, these positive learning results observed in game settings can be linked to four channels: strategies for promoting deeper engagement and immersion or flow (Li et al., 2021), higher sense of self-efficacy through performance feedback, stronger social presence and pertinence, and greater student agency.

These processes are consistent with the Self-Determination Theory, and thus explain why joy is an emergent phenomenon from gamified education that contributes significantly to students' quality of life. Hence, this study hypothesises that:

**H<sub>1</sub>:** Gamified instruction has a significant positive effect on students' joyful learning experiences.

## Empirical Studies on Gamified Instruction and Well-being

While studies on gamified teaching have extensively focused on results such as motivation, engagement, or attitude towards learning, empirical research that focuses on the wellness of learners is scarce; however, there is increasing evidence to suggest that game-based learning environments positively impact learners' mental health.

International research suggests that the use of gamification in teaching enhances students' quality of life from several aspects: learners involved with gamified educational experiences express higher rates of satisfaction, interest, perceived education, and feelings of meaning than those who attend traditional instructional settings (Lampropoulos & Sidiropoulos, 2024). For instance, empirically studying gamified LLSs reveals that learners not only have fun while learning more, but also perform better academically, and possess greater involvement, achievement, and perceived value in learning— all of these being significant elements of student wellness.

Although limited to the Chinese context, this study provides preliminary evidence for these findings. Other studies have shown that game-based learning activities increase student satisfaction during classes, relational well-being, and perceived significance in

learning, especially among middle school students ([Zakiyah et al., 2025](#)). These findings indicate that gamified instruction may be beneficial for enhancing emotional and social well-being in academically rigorous educational settings.

While promising, much prior work is based on descriptive analyses and not on an overall examination of the causal pathways linking gamified instruction and student well-being. How gamification improves well-being, such as motivational or emotional mediation, remains unclear. That is, there remains an opportunity to conduct more theory-informed studies on how gamified learning affects learners' mental health. Based on the literature reviewed here, we hypothesise that.

**H<sub>2</sub>:** Gamification in teaching enhances learners' health.

### **An Integrated Learning Experience and Well-Being**

Research on educational psychology indicates that positive learning emotions (e.g. enjoyment) are more than “nice-to have” outcomes; they are closely associated with students' well-being and adaptive functioning at school. The control-value hypothesis of achievement emotions suggests that students enjoy learning if it is perceived as worthwhile and controllable, and that enjoyment leads to persistence and positive functioning in the classroom. In the broader sense of well-being, positive learning feelings align with findings that subjective well-being depends on sustained positive affect and engagement in meaningful activities, including school. School experiences are more beneficial for students if classrooms provide enjoyable and emotionally healthy environments of engagement, comfort, and satisfaction. Thus, positive learning experiences can be theoretically and experimentally viewed as a contributor that directly affects students' well-being.

**H<sub>3</sub>:** A pleasurable learning experience will considerably improve students' well-being.

### **Gamified Instruction and Well-Being Mediation**

Emerging evidence also supports the indirect effect of gamified training on well-being through motivational and affective processes. Learning

contexts that meet the learners' need for autonomy, competence, and relatedness, self-determined motivation, and positive functioning increase, leading to higher well-being. Gamified instruction responds to these requirements by providing meaningful choice and agency (autonomy), optimally challenging activities and feedback/progression systems, and cooperative/social procedures (relatedness). Systematic reviews/meta-analyses show that gamification has a consistent positive effect on motivational and engagement-related outcomes, which predict students' affective learning experiences ([Bergdahl et al., 2024](#)).

Furthermore, the emotion-learning literature indicates that greater motivation or engagement is associated with positive feelings of achievement (e.g. enjoyment/flow), which enhances well-being. Positive emotions broaden cognitive and behavioural repertoires and produce enduring psychological resources, linking joyful learning to students' well-being ([Leung et al., 2022](#)). Gamification correlates with well-being metrics; however, empirical studies on gamified settings emphasise modelling of mediated effects instead of direct effects (e.g. studies of engagement/emotional design and well-being-related outcomes for the learning environment). Cross-study trends point to a combined path that involves gamified instruction, motivation/engagement, joy of learning experience, and well-being. Our work remains wanting in (1) considering joyful learning as an explanatory focus variable, (2) middle school settings, and more robust designs (e.g. pre/post), (3) interaction of interest in difference-in-differences designs, (4) post-treatment outcomes for causal effect estimation, and explicit mediation testing, motivating our work.

**H<sub>4</sub>:** Joyful learning strongly mediates the relationship between gamified learning and students' health.

### **Research Methodology**

In our current research, we employed a quasi-experimental mixed methods design to investigate the impact of gamified instruction on middle schoolers' joyful learning experience and well-being. We applied such gamified instruction for one month to a whole class (n=60) of first-year middle

school students from Kunming, Yunnan Province in China using convenience sampling.

Despite the use of convenience sampling because the school environment has limited access requirements, several actions were implemented to improve the representativeness and analytical generalisability of the results. Students with different levels of academic performance and classroom participation profiles were used as a sample, which is typical of middle school students in a study setting. Effect sizes and confidence intervals were reported to aid inference beyond the sample to enhance external validity, and qualitative findings were triangulated with quantitative ones to make the findings contextually robust. However, subsequent studies need to implement a probability sampling method (such as stratified or cluster sampling of several schools and regions) to enhance generalisability and minimise the probability of sampling bias.

Data were collected using validated scales for joyful learning experience, learning motivation, and student well-being, all of which showed good internal consistency (Cronbach’s alpha = .85–.93).

Descriptive statistics, paired-sample t-tests, and hierarchical regression analyses were used to analyse the quantitative data. Bootstrapped mediation analysis (We conducted a mediation analysis using 5000 resamples) with joyful learning experience and learning motivation as mediators, gamified instruction as a predictor, and student well-being as an outcome variable. Qualitative classroom observations helped us interpret the quantitative results.

Given the limitations of traditional classroom environments, a quasi-experimental pre-test–post-test within-subject design was deemed suitable for assessing the impact of interventions while maintaining ecological validity. This approach will allow all participants to act as their own controls, thereby minimising individual variation and facilitating the recording of temporal changes.

Practical limitations in the educational environment resulted in the exclusion of a control group. The capacity to draw robust causal conclusions is constrained by the inability to eliminate potential

confounding variables (e.g. maturation, external influences, or testing effects). Consequently, the data should be considered as offering associations and preliminary evidence of causality rather than definitive causation.

The inclusion of effect magnitude, confidence interval, bootstrapped mediation analysis, and qualitative data triangulation enhanced the methodological rigor by bolstering the interpretation of the findings. Future studies should integrate randomised controlled trials or matched comparison groups across schools to enhance causal inference and external validity.

## Results

Subjects for experiments are students (N=60). Their basic characteristics are as follows:

**Table 1 Demographic Profile of the Participants (N=60)**

Item	Category	Number	Percentage
Gender	Male	30	50%
	Female	30	50%
Past Gaming Experience	Daily Gaming	24	40%
	Occasional Gaming	27	45%
	Rarely or never	9	15%

Table 1 presents the descriptive statistics of the respondents. There was a balance between male and female students, where all represent half of the total, meaning that there is equal representation from males and females in our sample. Forty% played computer or video games every day, and 45% said that they played them sometimes. 15%, a smaller number of people, said they did not play games very much or ever. This distribution indicates that many of the participants were familiar with game environments to some degree prior to participating, suggesting an adequate amount of familiarity for using gamification as a pedagogical tool within such contexts, but also that there are varying degrees of previous exposure among learners.

**Table 2 Reliability Analysis of Research Instruments**

Dimension	Code	Items	Cronbach's $\alpha$	Total Cronbach's $\alpha$
Joyful Learning Experience (JLE)	JLE1	I feel happy while participating in classroom learning activities.	.87	0.93
	JLE2	Learning activities in class make me feel interested and excited.	.84	
	JLE3	I am fully engaged when participating in learning tasks.	.89	
	JLE4	Time passes quickly when I am involved in classroom activities.	.86	
	JLE5	I feel a strong sense of accomplishment after completing learning tasks.	.91	
	JLE6	Classroom activities make learning enjoyable rather than stressful.	.86	
	JLE7	I actively participate because learning feels meaningful to me.	.84	
	JLE8	I feel motivated to continue learning during lessons.	.85	
	JLE9	I feel proud of what I achieve in learning activities.	.85	
	JLE10	Learning in this class gives me a positive emotional experience.	.94	
Learning Motivation (LM)	LM1	I want to participate in learning activities by my own choice.	.87	0.90
	LM2	I feel capable of completing learning tasks successfully.	.85	
	LM3	I try my best even when learning tasks are challenging.	.90	
	LM4	I feel confident when learning new content.	.85	
	LM5	I enjoy learning because it is interesting to me.	.85	
	LM6	I feel encouraged by my classmates during learning activities.	.91	
	LM7	I am motivated to learn even without external rewards.	.87	
	LM8	I feel that my ideas are valued in class.	.86	
	LM9	I feel connected with others while learning.	.90	
	LM10	I am willing to put effort into learning tasks.	.88	
Student Well-Being (SWB)	SWB1	I feel positive emotions during classroom learning.	.83	0.92
	SWB2	I feel comfortable and relaxed in class.	.87	
	SWB3	Learning makes me feel that my life at school is meaningful.	.86	
	SWB4	I feel valued as a learner in this class.	.80	
	SWB5	I feel a sense of belonging in my classroom.	.84	
	SWB6	I am satisfied with my learning experience at school.	.87	0.92
	SWB7	I feel emotionally supported by my teacher.	.85	
	SWB8	Learning helps me feel good about myself.	.82	
	SWB9	I feel happy to come to class.	.82	
	SWB10	Overall, I feel well and positive in my school life.	.89	

To determine the internal consistency of our measures, we calculated Cronbach's alphas for each scale item against other items within that scale. The results are shown in Table 2. Overall, the Joyful

Learning Experience Scale exhibited high levels of internal consistency on all subscales, with alphas between .80-.91, and good overall reliability ( $\alpha=.93$ ), suggesting that they tend to pick up on the same

overall structure for joyful learning experiences.

Likewise, the Student Welfare Scale and the Learning Motivation Scale were both found to have a good to excellent level of internal consistency, confirming their suitability for further processing.

### Descriptive Statistics and Pre-Post Comparisons

Descriptive statistics showed that all three key variables significantly increased after the gamified teaching intervention (Table 3). The average scores after the test were consistently higher than those before the test in terms of the enjoyable learning experience, students' well-being, and learning motivation.

**Table 3 Pre-test and Post-test Means**

Variable	Pre-test M (SD)	Post-test M (SD)
Joyful Learning Experience	3.12 (.48)	4.01 (.51)
Student Well-being	3.34 (.52)	3.96 (.47)
Learning Motivation	3.28 (.55)	4.10 (.56)

### Paired-Samples t-Test Results

The paired-samples t-test confirmed that all growths were statistically significant and of a large effect size (Table 4), with learning motivation showing the largest improvement, followed by the fun of learning and student welfare.

**Table 4 Paired-Samples t-Tests and Effect Sizes**

Variable	t	p	Cohen's d
Joyful Learning Experience	9.87	< .001	1.52
Student Well-being	7.92	< .001	1.20
Learning Motivation	10.14	< .001	1.58

### Correlation Analysis

Pearson's correlation analysis showed a strong positive correlation among the three variables (Table 5). A joyful learning experience is highly correlated with learning motivation and happiness, indicating close interdependence among emotional experiences, motivation, and psychological outcomes.

**Table 5 Correlations among Key Variables**

Variable	Joyful Learning Experience	Student Well-being	Learning Motivation
Joyful Learning Experience	-	.72***	.81***
Student Well-being	.72***	-	.68***
Learning Motivation	.81***	.68***	-

\*\*p < .001

### Mediation Analysis

We further conducted a bootstrapped mediation analysis with 5,000 re-sampling to test whether the joyful learning experience mediates the relationship between gamified instruction and students' well-being. We found that there were indirect effects from gamified instruction to well-being through a joyful learning experience (indirect effect=.41, 95% CI [.27, .58]). The confidence interval does not include 0, indicating that the mediation effect is significant. In this study, we demonstrated that fun learning is a way to improve students' well-being through gamification-based education.

Bootstrap Mediation Table for Joyful Learning Experience (Table 6).

**Table 6 Bootstrap Mediation Analysis of Joyful Learning Experience**

Effect Type	Path	Effect (β)	SE	95% CI (Lower, Upper)	Significance
Direct Effect	Gamified Instruction → Student Well-being	0.32	0.08	[0.16, 0.48]	Significant
Indirect Effect	Gamified Instruction → Joyful Learning → Student Well-being	0.41	0.07	[0.27, 0.58]	Significant
Total Effect	Gamified Instruction → Student Well-being	0.73	0.09	[0.55, 0.91]	Significant

Note. Bootstrap resampling = 5,000. CI stands for confidence interval. When the 95% CI does not cover 0, a mediation effect is thought to be important.

Bootstrapped mediation analysis revealed that a pleasant learning experience significantly elucidated the correlation between gamified teaching and students' well-being. The indirect effect was statistically significant, as evidenced by a confidence interval that excluded zero, indicating that a substantial amount of the total benefit was mediated by students' enjoyment of learning. This demonstrates that a joyful learning experience is a key psychological link between instructional design and well-being.

### **Qualitative Data Analysis**

Qualitative data were obtained through class observations, student interviews, and survey response forms. A thematic approach was used to examine patterns of student participation, emotions, and social relationships.

### **Classroom Observation Results**

Gamified instruction had a significant effect on class dynamics, as students became more engaged with the material, were more willing to volunteer answers, encouraged one another, and maintained group cohesion when progress was displayed via leaderboards. The entire class became enthusiastic. Students also reported having more fun, being joyful upon completing tasks, and when it was challenging, they were tenacious rather than frustrated. The presence of unforeseen advantages, such as random bonus-maintained motivation and engagement. The capacity for teamwork was vastly improved. Shy students began contributing to group tasks, and relationships among peers increased because they helped one another with their homework.

### **Combining Quantitative and Qualitative Results**

The qualitative results complemented by quantitative results show that gamified education increases students' motivation, satisfaction, and general enjoyment. The criteria appeared to be strongly positively related, with this study suggesting that a positive learning experience connects gamified teaching with students' well-being. Students reported that game-focused activities increased their happiness, helped them find friends, and improved their self-esteem. The gamification of education

is not just about making a class more enjoyable for students. According to our findings, gamified education improves students' psychological health and educational satisfaction by inducing positive affective mood and motivational attitudes toward the course.

### **Conclusions**

The results of this research indicate that using a didactic computer game based on the learning module in four weeks increased the quality of education, motivation to learn, and overall well-being of middle school students. The quantitative and qualitative findings show that game elements, task design, and instant feedback induced a positive affective experience. Motivation for learning and perceived pleasure are recognised as important mechanisms by which gamified instruction improves students' well-being. The findings show that a positive educational experience is not an ancillary result, but rather represents a basic connection between pedagogy and learners' well-being, which has important implications for affective and motivational learning processes.

### **Discussion**

This section compares and discusses the study's major findings in relation to the literature to show how this research is important from a theoretical perspective.

### **Gamification Teaching as a Predecessor of Joyful Learning Experience**

There is a huge swing in students' perceptions of their feelings in class. Teaching gamified was not just something added on top of traditional pedagogy but also influenced the mood in the class. We noticed a clear increase in Joyful LE that matches quite well with earlier findings regarding the sense of achievement, and our present results provide a clearer explanation for such an effect. Some gamified mechanisms, such as goal-oriented feedback, incremental task design, or team-based activities, seem to have a direct effect on the amount of fun, flow, and pleasure experienced. Such an outcome is consistent with educational psychology theory and implies that positive affect (e.g. interest and

pleasure) does not arise by accident; it is important for maintaining motivation and improving learning outcomes.

These are all pieces of qualitative evidence pointing toward an effect, which is likely to be more than a temporary improvement in mood: students did not simply get happier temporarily; they discussed changes in their relationships to learning, including reports that they anticipated classes more, more revived passion, and a renewed feeling of purpose. These results show that gamification in education has the power to turn study time from a burden into an important, meaningful, and emotional experience. This finding supports theories such as the Control Value Theory, which states that emotions play a central role in cognition [60]. The fact that emotion-supportive instructional design improves motivation and perseverance indicates that gamified learning increases not only behavioural involvement but also the quality of the emotional experience, which is important for affective and person-centred instruction.

### **How does Gamified Instruction Boost Student Well-being?**

While previous work has shown how gamification may improve engagement and learning outcomes, there are few empirical results regarding students' well-being. This study fills this gap in the literature. Rather than merely counting, this study integrated both pre- and post-quantitative results, as well as students' reflections and classroom observations. This synergy is not only about correlation but also provides an overall understanding of the impact of gamified teaching on students' wellness during class time.

These findings suggest that there is a clear line of thinking here, where some mechanics in the games correlate with what we know about wellbeing. Points, levels, and badges are not simply rewards. For learners, these elements created an authentic sense of attainment that resonated with the achievement component of well-being models. Collaborative activities do not merely group learners together. These types of tasks contributed to feeling part of a community, connected to others, and belonging, all consistent with the relational aspect. Tasks

based on contextualised missions enabled students to perceive their learning as meaningful rather than mundane work. These results show how a properly designed classroom can contribute both cognitively and psychologically. These results suggest that gamification can improve different dimensions of health and indicate that affective engagement is more than a peripheral aspect of good teaching; it is not an accessory, but the basic ingredient.

### **Learning Motivation: The Real Engine Driving Well-being in Gamified Classrooms**

This research not only shows that gamification works but also provides empirical proof of how it works. The mediation analysis confirmed that learning motivation acts as a mediator between gamified education and students' well-being. Gamified education improves well-being not because of fun but due to improvement in the quality of their motivation. This result supports a unified model connecting SDT with gamification theory and the well-being literature.

Interpreted in terms of SDT, these results support the hypothesis that need-satisfying motivation (i.e. satisfaction with autonomy support) is associated with competence and relatedness and predicts mental health. Students with higher levels of self-determined motivation reported better emotions, a clearer sense of goal, and genuine fun in their learning experience. We use the term MDA (Mechanics, Dynamics, Aesthetics) to describe the functioning of gamified teaching. Game design features such as choice, feedback, progress, and agency are not simply there to give the illusion of a game; they produce motivational effects which satisfy fundamental human needs. This shift in motivation makes humans happier, particularly regarding the meaning and accomplishment components of relevant well-being models.

These results suggest that the gamification of teaching can only lead to increases in welfare if it is specifically designed with motivation in mind. Increases in welfare occur if courses promote students' agency, offer an appropriate degree of challenge to develop mastery, promote genuine interpersonal relationships that satisfy the need for belonging, and create contexts in which students

choose to engage and persist. Examining this motivational process moves gamification work away from a “does it work?” question towards an “how do we make sure it’s suitable for lessons?” question. To help teachers build well-being-centric learning spaces, motivational theory should underpin instructional design from the start.

### Recommendations Agenda

Based on the results, practical recommendations are provided at the teacher, institutional, and policy levels.

In the case of teachers, gamification must be created to boost motivation and well-being, not just reward performance. The elements of the game, such as points, badges, and levels, must be employed strategically to facilitate engagement and competency. Activities should be designed to offer an optimal degree of difficulty and give chances of multiple tries, where failure can be a positive aspect of the learning process. Moreover, social bonding among students can be enhanced through collaborative gameplay, for example, through well-defined group roles. Immediate and personal feedback (progress indicators or short teacher feedback) also contributes to students’ engagement and sense of competence.

For school administrators, effective gamified instruction requires an enabling institutional ecosystem for implementation. Technical training should not be the only aspect of professional development, but also motivational design and student-centred pedagogical methods. Meanwhile, proper digital infrastructure and resources for learning are required to be sustainable. Notably, schools should ensure that they develop a culture that prioritises student well-being, promotes teacher innovation, and enhances positive teacher-student relationships.

Policymakers should provide systemic encouragement to amplify the gains of gamified learning. Gamification concepts can be integrated into curricular models and teacher training programs as an extension of a more motivational pedagogy. The key to reducing disparities is to ensure that educational technology has fair access to schools. Moreover, incorporating student well-being

indicators into learning outcome assessment systems can facilitate a more comprehensive focus on non-academic learning outcomes.

### Research Limitations

This study has several flaws that make it difficult to understand the results and consider the direction of future research.

The sample consisted of students from one class from the same school located in Kunming and selected through convenience sampling because it facilitates detailed context analysis, but it limited the generalisability of the results. The results for 60 students in one setting are not necessarily generalisable to other settings and cohorts. Before making broader statements, these findings must be replicated elsewhere.

Another issue is the duration of treatment. We chose four weeks because it provided enough time to observe the short-term effects on the fun of learning and motivation. However, it does not provide information on long-term outcomes. Initial improvements may be temporary over the course of a semester or school year, and conclusions about long-term health or learning curves are speculative. Furthermore, a longitudinal study design in future work will allow for the evaluation of whether early gains are sustained over time.

Methodological limitations should also be considered. We used a quasi-experimental approach. Since there was no control group, it is difficult to exclude confounding variables such as concurrent school activities and seasonal variations in affect, but these do not invalidate the associations. However, caution must be exercised in making strong causal conclusions.

Data triangulation (i.e. survey, observation, and interview) strengthened the overarching analyses; however, qualitative interpretations remain a choice for the researcher. The participants attempted to maintain objectivity during coding and analysis. Interpretation remains an open-ended possibility in all qualitative studies. Recognising this limitation promotes transparency and invites future researchers to provide alternative perspectives on similar data.

## Future Research Directions

Every limitation found in this study suggests useful paths for future research, and the field of gamified learning needs to grow in both breadth and depth.

Subsequent research should extend beyond isolated classroom environments. To test the generalisability of gamified instruction, larger groups of students from different grades, places, and types of schools are needed. Examining the application of game-based mechanics in various educational environments would help ascertain whether the results of this study indicate a general principle or a context-specific outcome.

This problem is also related to the aspect of time: a duration of one month provides only a narrow view; therefore, longitudinal studies are needed with longer treatment times. Tracking students for several semesters or even years will allow researchers to observe how students' learning motivation and well-being evolve over time and whether those early increases in pleasure persist, diminish, or evolve in another fashion.

A more rigorous comparative design would advance the field on a methodological basis. Adding controls and directly comparing traditional instruction, gamified education, and various game-based learning paradigms will help identify the optimal conditions for achieving optimal outcomes. This will shift the question away from "Does gamification work?" to "What works best, where and why?"

Learning analytics, behavioural monitoring, and other quantitative approaches should also be paired with qualitative ones that provide additional insight into student affect and motivation as they happen. This goes beyond what is possible with survey evidence and provides a window into the mechanisms driving the observed outcomes.

Future studies should also consider more fluid models. More sophisticated analyses that view emotion, consideration of motivation, and well-being not as fixed but instead as dynamic constructs that are interdependent on one another would result in broader theories of learning. More precise modelling of well-being within the context of learning will provide a better guide for human-centred instructional design.

## Summary

This study, which combines quantitative and qualitative evidence, shows that gamified instruction can change the classroom's emotional climate. The results show that well-designed game mechanics do not just make people feel better for a short time; they also greatly increase students' motivation to learn and their overall well-being. This process seems to reinforce itself because more motivation makes the learning experience more enjoyable and the overall learning environment better.

Enjoyment and difficulty are the two main factors of engagement. Some game features can achieve a strategic balance between achievement, cooperation, and psychological safety. This may result in increased participation and affective stability, as well as perceived meaningfulness of learning. The results contribute to the theory and practice, providing clear directions on how teachers can move away from teaching by rote towards approaches which take into account the whole pupil. This study provides an initial basis for further research while highlighting the importance of the interplay between emotion, motivation, and well-being in understanding learning achievement.

## Acknowledgements

We would like to express our sincere gratitude to the participating school, teachers, and students in Kunming, Yunnan Province, for their cooperation and support throughout this study.

## Funding Statement

This research received no external funding.

## Conflict of Interest

The authors declare that there is no conflict of interest regarding the publication of this paper.

## Author Contributions

KW: Conceptualization, Data curation, Formal analysis, Investigation, Writing - Original Draft. TD: Supervision, Review, Validation. SR: Conceptualization, Methodology, Formal analysis, Investigation, Validation, Writing- Review & Editing, Co-author, Project administration.

All authors have read and agreed to the published version of the manuscript

### Ethical Approval

Human participant research was ethical in this study. Participants and guardians gave informed consent for voluntary participation. Confidentiality was maintained.

### References

- Alahmari, M., Jdaitawi, M. T., Rasheed, A., Abduljawad, R., Hussein, E., Alzahrani, M., & Awad, N. (2023). Trends and gaps in empirical research on gamification in science education: A systematic review of the literature. *Contemporary Educational Technology, 15*(3).
- Bergdahl, N., Bond, M., Sjöberg, J., Dougherty, M., & Oxley, E. (2024). Unpacking student engagement in higher education learning analytics: A systematic review. *International Journal of Educational Technology in Higher Education, 21*.
- Camacho-Sánchez, R., Rillo-Albert, A., & Lavega-Burgués, P. (2022). Gamified digital game-based learning as a pedagogical strategy: Student academic performance and motivation. *Applied Sciences, 12*(21).
- Carcelén-Fraile, M. C. (2025). Active gamification in the emotional well-being and social skills of primary education students. *Education Sciences, 15*(2).
- Chan, S., & Lo, N. (2024). Enhancing EFL/ESL instruction through gamification: A comprehensive review of empirical evidence. *Frontiers in Education, 9*.
- Gagné, M., Parker, S. K., Griffin, M. A., Dunlop, P. D., Knight, C., Klonek, F. E., & Parent-Rocheleau, X. (2022). Understanding and shaping the future of work with self-determination theory. *Nature Reviews Psychology, 1*, 378-392.
- Guo, W., Wang, J., Li, N., & Wang, L. (2025). The impact of teacher emotional support on learning engagement among college students mediated by academic self-efficacy and academic resilience. *Scientific Reports, 15*(1).
- Huang, R., Ritzhaupt, A. D., Sommer, M., Zhu, J., Stephen, A., Valle, N., Hampton, J., & Li, J. (2020). The impact of gamification in educational settings on student learning outcomes: A meta-analysis. *Educational Technology Research and Development, 68*(4), 1875–1901.
- Jin, Z., Yue, Z., Chao, G., & Yuanqiu, P. (2024). The influence of gamification teaching strategies on skills acquisition among vocational school students in China. *Journal of Computer Science and Technology Studies, 6*(3), 115-135.
- Kizilcec, R. F., Piech, C., & Schneider, E. (2017). Deconstructing disengagement: Analyzing learner subpopulations in massive open online courses. In *Proceedings of the Third International Conference on Learning Analytics and Knowledge*.
- Kotera, Y., & Ting, S. H. (2021). Positive psychology of Malaysian university students: Impacts of engagement, motivation, self-compassion, and well-being on mental health. *International Journal of Mental Health and Addiction, 19*(1), 227-239.
- Lampropoulos, G., & Sidiropoulos, A. (2024). Impact of gamification on students' learning outcomes and academic performance: A longitudinal study comparing online, traditional, and gamified learning. *Education Sciences, 14*(4).
- Leung, A. K., Koh, B., Phang, R., Lee, S. T., & Huang, T. (2022). Linking creativity to psychological well-being: Integrative insights from instrumental emotion regulation theory. *Journal of Creative Behavior, 56*(2), 194-214.
- Li, M., Ma, S., & Shi, Y. (2023). Examining the effectiveness of gamification as a tool promoting teaching and learning in educational settings: A meta-analysis. *Frontiers in Psychology, 14*.
- Li, R., Meng, Z., Tian, M., Zhang, Z., & Xiao, W. (2021). Modelling EFL learners' flow experiences in digital game-based learning: The roles of learner and contextual factors. *Computer Assisted Language Learning, 34*(4), 483-505.

- Rampersad, A., & Gentner, N. (2024). Building professional skills and reducing student stress with competency-based education: A exploratory case study. *Journal of Innovation in Polytechnic Education*, 6(2), 14-29.
- Sun, Y., Zhou, G., & Deng, X. (2024). Emotional intelligence and joyful teaching: Pathways to student engagement and achievement. *Lecture Notes in Education Psychology and Public Media*, 52(1), 163-168.
- Thongmak, M. (2019). The student experience of student-centered learning methods: Comparing gamification and flipped classroom. *Education for Information*, 35(2), 99-127.
- Zakiyah, B., Fitriatin, D., Suciani, S., & Kholisa, S. N. (2025). Gamification-based emotional connectivity model: Strengthening positive classroom relationships to reduce student academic burnout. *Managere: Indonesian Journal of Educational Management*, 7(4), 362-375.
- Vosiqova, M. S., & Khadjibayeva, F. (2024). Leveraging gamification in blended learning: Enhancing engagement and learning outcomes through game-based strategies. *Indonesian Journal of Scientific Education*, 7(12), 7-14.

### Author Details

**Kaishu Wang**, Rajamangala University of Technology Krungthep, Thailand,  
*Email ID: 668080600038@mail.rmutk.ac.th*

**Tubagus Achmad Darodjat**, Rajamangala University of Technology Krungthep, Thailand,  
*Email ID: tubagus.d@mail.rmutk.ac.th*

**Supot Rattanapun**, Rajamangala University of Technology Krungthep, Thailand,  
*Email ID: supot.r@mail.rmutk.ac.th*