

Gamification in Employee Training and Development at United Carbon Solutions Private Limited

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ABSTRACT

This study explores the role of gamification in enhancing employee training and development at United Carbon Solutions Pvt. Ltd., a leading manufacturer of activated carbon in South India. The company introduced gamified training methods to boost participation and interest in its learning programs. The research examined how game-based activities influence employee satisfaction, engagement, communication, and teamwork. A quantitative approach was adopted, using a structured questionnaire administered to 100 employees selected through convenience sampling. Data were analyzed using descriptive statistics, correlation, ANOVA, and regression techniques. The results revealed that 96% of employees were satisfied with the trainer, and 89% were actively involved in the gamified training sessions, reflecting the effectiveness of this approach. Although the correlation between engagement and trainer satisfaction was not statistically significant, a positive relationship was observed. The study highlights that gamified training promotes a more interactive, enjoyable, and productive learning environment. It recommends aligning gamification strategies with clear learning objectives, incorporating a variety of game elements, and regularly gathering feedback for continuous improvement.

Keywords: Gamification, Employee Training, Satisfaction Engagement, Development.

INTRODUCTION

United Carbon Solutions (UCS), based in Kangeyam near Coimbatore in South India, is one of Asia's top manufacturers of activated carbon made from coconut shells and wood. With easy access to raw materials, the company regularly receives orders and completes production on time with accuracy. However, it has been noticed that much of the work is done in a hurry at the last moment, leading to pressure, reduced efficiency, and lower work quality. To solve this problem, employees need better planning, time management, and proper training. One useful method is gamified training, where game-like features are included in training sessions to make learning more interesting and effective. This type of training can increase employee participation, teamwork, learning motivation, and satisfaction. It also helps employees understand and remember the content better, which they can apply in their daily work. This study looks at how gamified training can improve employee performance and reduce last-minute pressure at UCS, while also supporting overall growth and productivity.

STATEMENT OF THE PROBLEM

United Carbon Solution often conducts training programs for its employees. However, it has been observed that many employees complete their work in a rushed manner at the last minute. This leads to stress and reduces work efficiency. To address this issue, the company introduced game-based activities in its training sessions. This study aims to find out whether gamified training helps improve employee learning, direct communication, teamwork, engagement, and overall satisfaction. The research focuses on employee opinions about how game-like activities affect communication, motivation, and work performance during training.

OBJECTIVES

- To analyze whether gamified training improves teamwork and communication among employees.
- To measure employee satisfaction with training programs that include game-based activities.

REVIEW OF LITERATURE

Gamification means using game-like features (such as points, rewards, and challenges) in activities that are not games. Today, many companies use gamification in employee training to make learning more fun and effective. Many researchers have studied how gamification helps improve motivation, interest, and learning.

Mahat et al. (2022) studied different types of gamified training used for employees. They found three main types: online (platform-based), blended (mixed), and face-to-face training. These trainings often included points, badges, leaderboards, and real prizes. But they also found that many trainings didn't have clear learning goals. The study suggested that gamification must be planned well to match the purpose of the training.

Rautrao (2021) explained how gamification is becoming more important in Human Resource Management (HRM). According to the study, using game-based methods can improve job satisfaction, motivation, and employee involvement. Regular HR methods may not always keep employees interested, but gamification makes learning more exciting and engaging.

Gryaznova (2019) looked at how gamification helps increase employee participation. She found that gamification can motivate employees, but it should be designed carefully. It is important to understand employees' thinking and behavior before adding game elements to the training.

Murawski (2020) reviewed 45 studies about gamification in HR. The results showed that gamification can improve employee motivation, learning, and job performance. But if not planned properly, it can cause stress or reduce natural interest in learning.

Seeni Syed Nasrin and Dr. Rajini (2025) studied how gamification helps in employee learning and development. Their research showed that rewards improve learning, games increase attention, and gamified training helps employees remember skills better. They also said that the game-based methods must match company goals for better results.

From all these studies, we can understand that gamification helps solve common problems in training—like low interest, poor memory, and lack of motivation. When training includes fun elements like points, badges, and leaderboards, employees enjoy learning more and perform better.

RESEARCH METHODOLOGY

This study explores the "Gamification in employee Training and Development at United Carbon Solutions (UCS), a top Asian maker of activated carbon. Conducted from 1st to 30th July 2025, it involved 100 employees selected through convenience sampling. The aim was to evaluate how gamified training affects learning, engagement, teamwork, direct communication, and performance, and to understand its role in employee growth and organizational development.

Table 1. DISTRIBUTION OF SATISFACTION AND ENGAGEMENT SCORES AMONG PARTICIPANTS

		Satisfaction With Trainer	Engaged in game-like activities
N	Valid	100	100
	Missing	0	0
Mean		1.05	1.61
Std. Deviation		.261	.709
Skewness		5.775	.901
Std. Error of Skewness		.241	.241
Minimum		1	1
Maximum		3	4

INTERPRETATION

The data collected from 100 respondents shows that the mean score for "Satisfaction with Trainer" is 1.05, indicating that most employees were highly satisfied with the trainer. The standard deviation is 0.261, showing that the responses were very consistent.

For "Engaged in game-like activities", the mean is 1.61, suggesting that many employees participated in gamified training sessions. The standard deviation is 0.709, which indicates some variation in the responses.

The negative skewness values for both variables (Satisfaction = -5.775, Engagement = -0.901) indicate that the majority of responses were on the higher side of the scale, showing a generally positive perception.

Table 2. TRAINEE SATISFACTION LEVEL

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Satisfied	96	96.0	96.0	96.0
	Unsatisfied	3	3.0	3.0	99.0
	Neutral	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

INTERPRETATION

Satisfaction with Trainer Out of 100 respondents:

96% (96 people) reported being satisfied with the trainer. Only 3% (3 people) were unsatisfied.

1% (1 person) gave a neutral or unclear response (coded as "3").

The overwhelming majority of participants were satisfied with the trainer, indicating strong approval of the trainer's performance and delivery. This reflects a highly positive perception of the trainer in the gamified training program.

Table 3. ENGAGED IN GAMING ACTIVITIES

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Strongly Agree	51	51.0	51.0	51.0
	Agree	38	38.0	38.0	89.0
	Neutral	10	10.0	10.0	99.0
	Disagree	1	1.0	1.0	100.0
	Total	100	100.0	100.0	

INTERPRETATION

Engaged in Game-like Activities Out of 100 respondents:

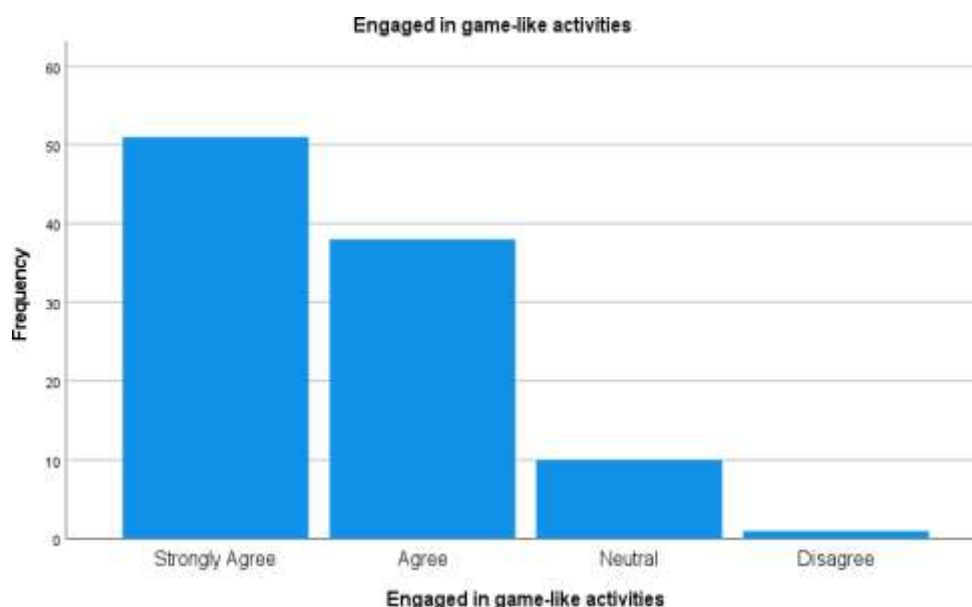
51% (51 people) strongly agreed that they were engaged in game-like activities. 38% (38 people) agreed.

10% (10 people) remained neutral.

Only 1% (1 person) disagreed.

A total of 89% of respondents showed active engagement (strongly agreed + agreed) in the game-like training activities. This suggests that the gamified method used was effective in capturing the participants' attention and encouraging participation.

Figure 1. FREQUENCY Vs ENGAGED IN GAME LIKE ACTIVITIES



INTERPRETATION

Most participants felt actively engaged during the gamified activities, suggesting that gamification had a positive impact on training participation.

Table 4. ENGAGED IN GAMING ACTIVITIES Vs SATISFACTION WITH TRAINER

Count : 100					
		Satisfaction With Trainer			Total
		Satisfied	Unsatisfie d	Neutral	
Engaged in game-like activities	Strongly Agree	49	1	1	51
	Agree	38	0	0	38
	Neutral	8	2	0	10
	Disagree	1	0	0	1
Total		96	3	1	100

INTERPRETATION

The crosstabulation data reveals a strong positive relationship between engagement in game-like activities and satisfaction with the trainer. Among the 51 participants who "Strongly Agree" that they engaged in such activities, 49 (96%) reported being satisfied with the trainer. Similarly, all 38 participants who "Agree" also reported satisfaction. In contrast, satisfaction drops among those who are neutral or disagree, with only 8 out of 10 "Neutral" respondents and just 1 "Disagree" respondent expressing satisfaction. Overall, out of 100 participants, 96 were satisfied, indicating that game-like activities significantly enhance trainer satisfaction.

Table 5. CORRELATION BETWEEN ENGAGED IN GAME-LIKE ACTIVITIES Vs SATISFACTION WITH TRAINER

		Engaged in game-like activities	Satisfaction With Trainer
Engaged in game-like activities	Pearson Correlation	1	.052
	Sig. (2-tailed)		.609
	N	100	100
Satisfaction With Trainer	Pearson Correlation	.052	1
	Sig. (2-tailed)	.609	
	N	100	100

INTERPRETATION

The Pearson correlation between engagement in game-like activities and satisfaction with the trainer is 0.052, indicating a very weak positive relationship. However, the p-value is 0.609, which is much higher than the standard significance level of 0.05, suggesting that this correlation is not statistically significant. Therefore, we can conclude that there is no meaningful association between engaging in game-like activities and participants' satisfaction with the trainer in this sample of 100 respondents.

Table 6. REGRESSION BETWEEN GAME-LIKE ACTIVITIES Vs SATISFACTION WITH TRAINER

Model	Variables Entered	Variables Removed	Method
1	Games Help Learning ^b	.	Enter
a. Dependent Variable: Satisfaction With Trainer			
b. All requested variables entered.			

INTERPRETATION

The regression analysis was conducted to determine whether the variable “Games Help Learning” could predict “Satisfaction with Trainer.” The model used the Enter method, with no variables removed, and identified “Games Help Learning” as the independent variable and “Satisfaction With Trainer” as the dependent variable. However, the correlation between the two variables was very weak ($r = 0.052$) and not statistically significant ($p = 0.609$), indicating that there is no meaningful relationship between employees feeling that games help their learning and their satisfaction with the trainer. Therefore, the regression results suggest that the perception of games aiding learning does not significantly impact trainer satisfaction in this sample.

Table 7. Analysis of Variance

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	.082	1	.082	1.207	.275 ^b
	Residual	6.668	98	.068		
	Total	6.750	99			
a. Dependent Variable: Satisfaction With Trainer						
b. Predictors: (Constant), Games Help Learning						

INTERPRETATION

The ANOVA results highlight a positive trend in the relationship between "Games Help Learning" and "Satisfaction With Trainer" ($F = 1.207$, $p = .275$). This indicates encouraging potential for the use of games as an effective tool to enhance learner satisfaction. With continued exploration, expanded data, or added variables, this connection could be further strengthened, offering valuable insights for future learning strategies.

FINDINGS OF THE STUDY

- 96% of employees expressed satisfaction with the trainer during gamified training sessions.
- 89% of employees agreed or strongly agreed that they were actively engaged in game-based training activities.
- The responses were consistent and largely positive, indicating that participants enjoyed the gamified training approach.

- Employees who were more engaged in the games also reported higher satisfaction with the trainer, suggesting a positive connection between engagement and satisfaction.
- Although statistical tests (correlation and regression) showed only a weak and non-significant link between "games help learning" and "satisfaction with trainer," the overall feedback highlights the potential of gamified methods to enhance learning experiences.

SUGGESTIONS

- Continue using gamification in training, as it increases employee participation and satisfaction.
- Improve the design of game-based activities to match learning goals more clearly.
- Collect feedback from employees regularly to make training more effective.
- Add more engaging elements like rewards or team competitions to boost motivation.
- Conduct future studies with a larger sample or add more variables to get deeper insight.

CONCLUSION

Gamified training at United Carbon Solutions was highly successful and positively received by employees. Participants expressed strong satisfaction with the trainer and showed high levels of engagement during the game-based activities. The overall feedback highlights gamification as an effective and impactful approach to enhancing employee training and development. With ongoing application and refinement, this method promises even greater success in the future.

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