

# The Effect of Introversion and Extroversion on ELT Teacher Engagement with Gamified Classroom Instruction Techniques

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## Abstract

The implementation and success of gamified instruction which has become a popular method for teaching English Language Teaching (ELT) depends on the personality characteristics of teachers. The study which used both qualitative and quantitative methods investigated how ELT teachers who are introverted or extroverted use gamified teaching methods in their classrooms. The study involved thirty in-service ELT teachers who completed a two-week professional development course on gamified ELT strategies after they were classified into introvert and extrovert groups based on their Eysenck Personality Questionnaire (EPQ) results. The researchers monitored their classroom activities for six weeks while they gathered data through different methods which included direct observation, tracking student engagement, and conducting interviews afterward. The analysis showed that extroverted teachers used gamified activities more often during their weekly teaching activities ( $M=4.2$ ,  $SD=0.8$ ) compared to introverted teachers who used them ( $M=2.9$ ,  $SD=1.1$ ),  $t(28)=3.87$ ,  $p<.001$ ,  $d=1.38$ . Extroverts also reported higher levels of personal enjoyment and perceived student engagement. Introverted teachers developed their lesson plans through more reflective methods which emphasized cognitive aspects of gamification instead of competitive elements. Extroverts chose to keep their social interactions while introverts wanted their structured gamification to meet specific language objectives. Teacher personality emerges as the key factor that determines whether people choose to implement gamification tools. The training programs should establish different learning paths which include extroverts' need for social interaction and introverts' need for structured learning to improve teaching practices.

**Keywords:** introversion, extroversion, gamified instruction, English language teaching, teacher professional development

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## Introduction

Educational system has adopted gamification as its main instructional method through the use of game design elements which include points, badges, leaderboards, and narrative challenges. The system seeks to enhance student motivation, engagement and mental performance by using game rules which attract students to its content (Hamari et al., 2014; Seaborn & Fels, 2015). The use of gamified teaching methods brings special advantages to the English Language Teaching (ELT) field. Language acquisition benefits from learning environments which reduce student anxiety, allow for repeated practice, and provide safe spaces to learn through trial and error (Zainuddin et al., 2020a). The implementation of gamification creates three educational benefits through its development of student communication skills, its support of independent learning, and its creation of active school environments (Alsawaier, 2018; Zainuddin et al., 2020b). Teacher education programs currently support its implementation because it has become essential to their training framework.

The successful implementation of gamification depends on multiple factors which need to be assessed before starting the project. The effectiveness of any teaching tool depends significantly on the

teacher who uses it in the classroom (Klusmann et al., 2016; Marinensi & Romero Carbonell, 2021; Martí-Parreño et al., 2016). The beliefs a teacher holds about their abilities and their personality traits create a major impact on how they implement fresh techniques in their work (Filippou et al., 2024). Teachers need to develop a professional connection with gamification before they can use it effectively.

The disturbance which occurs between people stems from their fundamental nature which defines their social conduct, their ability to perceive, and react to their surroundings (Costa & McCrae 1992). The trait continuum establishes different teaching methods which teachers select based on their particular teaching preferences. Teachers who exhibit extroverted behavior obtain their energy through social interactions and they establish active classroom environments which include cooperative work and spontaneous learning activities (Zelenski et al., 2013). Teachers who identify as introverts will use their inner thinking to gain energy because they prefer teaching methods which include organized activities that require their students to think deeply about the material (Domínguez et al., 2013). The design of gamification requires people to use their natural preferences because the system can be made to support active social competition or peaceful individual problem solving (Seaborn & Fels, 2015).

The research on how teacher characteristics affect their teaching performance remains incomplete despite people knowing that personality traits determine their work behavior. The research on how introverted and extroverted ELT teachers use gamified instruction in real classroom settings remains limited according to the study of Kristof-Brown et al. (2025). The gap exists in both theoretical and practical dimensions. Theoretical research about person-innovation interaction shows a restriction because researchers studied human behavior through established frameworks which include Trait Activation Theory. The situation creates a vital problem because professional development (PD) programs use gamification as an all-purpose solution while they implement standardized training approaches which ignore essential individual characteristics that decide its employment and adaptation (Tett & Burnett, 2003).

The investigation shows how this error creates actual risks. PD that is misaligned with teacher personality may lead to implementation resistance, increased anxiety, or superficial adoption that misses the pedagogical depth of gamification (Alsawaier, 2018). An introverted teacher who experiences pressure to conduct social and competitive games will feel discomfort while an extroverted teacher will miss the chance to strategically use individual reflective gamified elements. The process will block all creative development which should benefit student educational progress. Teachers need to establish a personality-based pedagogy framework which requires them to develop instructional methods that use gamification according to different teacher personality types (Kristof-Brown et al., 2005).

Research needs targeted evidence which will help develop this particular method. The study investigates how introverted and extroverted ELT teachers differ in their behavioral engagement with implementation strategies and perceptual attitudes toward gamified classroom instruction techniques. The findings will establish a base which enables the development of advanced teaching methods for educational gamification which will ensure fair access to all students.

### **Statement of the Problem**

Teacher implementation serves as the main barrier to effective English Language Teaching (ELT) gamified strategy integration because this process depends on various elements which go beyond teachers' technical skills (Klusmann et al., 2016; Marinensi & Romero Carbonell, 2021; Martí-Parreño et al., 2016). Teachers' disposition toward gamification implementation will determine its success in classrooms despite numerous documented benefits. Current educational frameworks together with professional

development (PD) programs fail to recognize an essential individual factor which determines how teachers will implement new educational methods (Alsawaier, 2018; Filippou et al., 2024).

The traits of individuals directly impact their ability to implement new teaching methods inside educational settings. Extroverted teachers may naturally gravitate toward the interactive, spontaneous, and competitive facets of gamification, while introverted teachers may be more drawn to its structured, reflective, and cognitively focused elements (Domínguez et al., 2013; Seaborn & Fels, 2015). The core problem, therefore, is not that teachers differ in these preferences, but that prevailing approaches to gamification training often ignore this dichotomy, presenting it as a one-size-fits-all toolkit. The professional development program fails to support various teaching methods because it lacks personalized guidance and suitable personality-based learning paths.

The resulting misalignment produces two distinct risks which affect educational settings. Introverted teachers, when presented only with highly social or competitive gamification models, may experience discomfort and anxiety, leading them to underutilize the technique or implement it with low self-efficacy (John et al., 2008). Extroverted teachers who have not been trained to use gamification through strategic and reflective methods will mainly apply it for basic classroom activities, which will cause them to miss out on its potential to promote metacognitive development and advanced problem-solving abilities (Hamari et al., 2014). Both scenarios lead to students receiving an inadequate learning environment because the educational benefits of gamification are restricted through a failure to implement person-centered methods.

The existing gap prevents educational institutions from improving effective professional development programs which would enhance learning outcomes and create authentic learning experiences through gamification techniques in English language teaching. The empirical research should demonstrate the distinctive patterns which introverted and extroverted teachers use to interact with and implement gamified teaching methods while identifying the educational adjustments which will benefit both teacher types. The teacher education system will maintain its current practices to create standardized teaching methods which will not help all educators who work in the profession without conducting this research.

### **Significance of the Study**

This research study establishes important outcomes which affect theoretical knowledge, professional work and the development of ELT teacher education programs. The research study demonstrates how teacher personality traits influence gamified teaching methods through empirical research which proves their effectiveness and shows the need for personalized teaching techniques.

### **Theoretical Significance**

The research uses Trait Activation Theory as the foundation to expand existing knowledge about gamification and teacher cognition research. The study examines how different situational elements in gamified learning environments which include real-time social collaboration features and self-paced cognitive puzzle features activate introverted and extroverted traits in users. The research transforms theoretical discussions by presenting gamification as an active interaction between individuals and their environments which leads to better understanding of how teacher attributes affect educational innovations.

### **Practical Significance for Teacher Development**

The research results provide teacher educators and professional development designers with an evidence-based framework which enables them to design personalized learning pathways. The design of

PD programs should use modular pathways which allow multiple pathways to employ for teaching students. The first pathway trains teachers to develop and operate interactive class games which suit students who naturally exhibit extroverted behavior. The second pathway enables teachers to create and implement gamification methods which use reflection, narratives, and problem-solving activities to support their students' unique needs. The training program introduces personalized learning options which help organizations overcome resistance to implementation and solve problems with incorrect execution of training programs that use one-size-fits-all training methods.

### **Practical Significance for Classroom Teachers**

The study shows how pedagogical self-awareness helps in-service ELT teachers act more effectively. Teachers can use the reflective framework to evaluate their comfort levels and teaching effectiveness with different gamified techniques which allow them to choose and modify teaching methods that match their authentic teaching identity. The implementation process requires a proper alignment because it needs to reach a stage where educators can execute teaching methods with full confidence while maintaining educational effectiveness which benefits their students.

### **Programmatic and Policy Significance**

The implementation of professional learning programs depends on their capacity to provide customized learning experiences for their participants according to the research findings. The professional development process should include training programs which acknowledge that teachers have different ways of teaching they need to learn about. The implementation of personality-based training programs represents a tactical method to create enduring changes in education while enhancing teacher health and achieving optimal advantages from professional development.

The research recommends an instructional innovation method which uses psychological knowledge to create better human-centered teaching methods which require understanding the various teaching styles that teachers bring to their work.

### **Purpose of the Study**

The purpose of this mixed-methods study is to systematically investigate the relationship between ELT teachers' personality orientation (introversion vs. extroversion) and their engagement with, implementation of, and perceptions toward gamified classroom instruction techniques. The research study combines quantitative data about classroom activities with qualitative data on teacher experiences to show that teachers use gamification differently because of their fundamental personality traits. The findings are intended to generate evidence-based recommendations for designing more effective, personalized, and psychologically attuned professional development in technology-enhanced language teaching.

### **Research Questions**

1. Do introverted and extroverted ELT teachers differ in their levels of behavioral and affective engagement with gamified classroom instruction?
2. Is there any significant difference between introverted and extroverted ELT teachers in the variety or cognitive complexity of gamified techniques they implement?
3. Is there any association between teacher personality orientation and thematic patterns in perceptions regarding the value, challenge, and suitability of gamification?

### **Null Hypotheses**

1. Introverted and extroverted ELT teachers do not differ in their levels of behavioral and affective engagement with gamified classroom instruction.
2. There is no significant difference between introverted and extroverted ELT teachers in the variety or cognitive complexity of gamified techniques they implement.

## **Literature Review**

### **Gamification in ELT Instruction**

Gamification applies game elements to educational environments through points badges, challenges, and leaderboards which boost student motivation and involvement in learning activities. The research shows that gamification helps English Language Teaching students to develop their communicative skills while gaining independence and improving their classroom relationships (Zainuddin et al., 2020a; Zainuddin et al., 2020b). Teachers report that game-based activities enable students to speak freely while creating interactive learning experiences (Filippou et al., 2024). The research shows that educational methods need proper implementation because students lose their internal motivation and ability to learn deeply when teachers use game elements without educational purposes (Domínguez et al., 2013; Hamari et al., 2014). The research shows that teachers play an important role as they interpret and implement gamification in their classrooms. The study shows that personal traits drive educators to select teaching methods which determine their implementation success.

### **Personality Traits and Teaching Behavior**

The Five-Factor and Eysenck personality frameworks define social behavior patterns through two basic personality traits which include introversion and extroversion (Costa & McCrae, 1992). The educational environment uses these traits to identify specific teaching approaches. Extroverted teachers tend to thrive in dynamic, interpersonal environments and often favor spontaneous, collaborative activities (John et al., 2008). Introverted teachers tend to select reflective environments which follow structured frameworks and they show a preference for task-based learning through demanding mental activities (Alsawaier, 2018). Effective teaching practices exist because these natural tendencies lead to teaching success through different methods. They become critically significant when teachers encounter pedagogical innovations like gamification, which inherently vary in their demands for social interactivity versus individual cognition.

### **Teacher Engagement and Personality**

The three components of teacher engagement which include emotional, cognitive, and behavioral dedication to their teaching work receive their definition through the personality traits of teachers (Filippou et al., 2024; Klusmann et al., 2016; Marinensi & Romero Carbonell, 2021; Martí-Parreño et al., 2016). Teachers with extroverted personality traits display their enthusiasm through energetic behavior, while introverted teachers show it through their planning and also the evaluation process of their work commitments (Hamari et al., 2014; Tett and Burnett, 2003). The study shows that extroverts display their social activities through team competitions while introverts show their engagement through their work on puzzle-based tasks and narrative-driven tasks (Domínguez et al., 2013; Seaborn & Fels, 2015). The identification of different engagement patterns becomes essential to create professional development programs which recognize the value of various professional backgrounds (Alsawaier, 2018; Kristof-Brown et al., 2005).

### **Theoretical Perspectives: Trait Activation and Self-Determination**

The connection between personality traits and gamification elements can be understood through two different theoretical frameworks. Trait Activation Theory (Tett & Burnett, 2003) explains that situational triggers make people show their personality traits through their actions. The classroom uses various game elements to create different activation pathways which enable students to display their extroverted, sociable, and competitive characteristics or their introverted, reflective, and strategic characteristics. Self-Determination Theory (Deci & Ryan, 2020) explains that motivation arises when people achieve their needs for freedom, competence, and social connections. The different needs of people can be fulfilled through gamification which shows different results because extroverts enjoy teamwork while introverts value their independence during self-directed activities.

### **Gamification Preferences among Introverts and Extroverts**

Researchers who study instructional design have discovered that introverts and extroverts favor different elements of gamification in their learning (Filippou et al., 2024; Zainuddin et al., 2020a). Extroverts show a greater liking for competitive ranking systems, real-time group quests, and activities that want them to speak without preparation (Hamari et al., 2014; Zainuddin et al., 2020a). Introverts show a preference for narrative-based exploration because they value solo challenges, logic puzzles, and asynchronous reflection points (Domínguez et al., 2013; Kristof-Brown et al., 2005; Seaborn & Fels, 2015). The preferences show a spectrum of comfort which people use to measure their effectiveness in handling different social situations (Klusmann et al., 2016; Marinensi & Romero Carbonell, 2021; Martí-Parreño et al., 2016). Teacher training programs should implement separate gamification paths which include social quiz game and branching scenario development as two distinct options because these pathways will help teachers use their natural abilities (Alsawaier, 2018; Zelenski et al., 2013).

### **Gamified Teacher Training and Professional Development**

The new field of gamified teacher training works to increase professional development participation (Zainuddin et al., 2020a; Zainuddin et al., 2020b) but designers create programs without considering the different personality types found among participating teachers (Filippou et al., 2024; Seaborn & Fels, 2015). The design of a generic gamified PD course unintentionally benefits extroverted users because it requires members to work together on tasks which they need to present to others (Hamari et al., 2014; John et al., 2008). The training program requires custom development which provides structured asynchronous modules to introverted teachers and live simulation workshops to extroverted teachers in order to improve learning outcomes across all participants (John et al., 2008; Kristof-Brown et al., 2005). Nevertheless, the field currently lacks empirical models that can create individualized, gamified, and personalized development programs based on personality assessments for English language teaching purposes (Alsawaier, 2018; Domínguez et al., 2013).

### **Synthesis and Identified Gap**

The literature demonstrates that gamification serves as an effective yet intricate educational method for English language instruction (Zainuddin et al., 2020a; Zainuddin et al., 2020b). The research demonstrates that teacher personality traits serve as a fundamental factor which shapes their overall teaching methods (Filippou et al., 2024; Klusmann et al., 2016; Marinensi & Romero Carbonell, 2021; Martí-Parreño et al., 2016). The research shows that people with different levels of introversion and extroversion will experience gamification in different ways (Hamari et al., 2014; Seaborn & Fels, 2015). Researchers have not yet developed a complete theoretical framework that connects personality characteristics to both student engagement patterns and their assessment of educational experiences in English language teaching environments (Alsawaier, 2018; Zelenski et al., 2013). The research has shown that educational professionals require further training in secondary educational contexts for effective

teacher development programs (Filippou et al., 2024; Kristof-Brown et al., 2005). The study will use Trait Activation Theory and Self-Determination Theory to conduct a mixed-methods study of in-service English language teaching teachers to investigate their integrated research gaps.

## Methodology

### Participants

Participants were 30 in-service ELT teachers (Female=18, Male=12) purposively sampled from three branches of Safir Language Academy in Tehran. All participants provided written informed consent. They ranged in age from 25 to 45 years ( $M=34.2$ ,  $SD=5.8$ ) and had teaching experience between 2 and 15 years ( $M=8.4$ ,  $SD=4.1$ ). Using the Eysenck Personality Questionnaire-Revised (EPQ-R) and a median-split procedure on the extraversion scale scores, participants were classified into two groups: introverted ( $n=14$ ) and extroverted ( $n=16$ ).

### Design of the Study

A convergent parallel mixed-methods design (Creswell & Plano Clark, 2017) was employed. Quantitative and qualitative data were collected concurrently during a six-week implementation period following a professional development (PD) intervention. The two data strands were analyzed separately and then integrated during the interpretation phase to provide a comprehensive understanding of how personality relates to engagement with gamified instruction.

### Data Collection Instruments

1. **Eysenck Personality Questionnaire-Revised (EPQ-R):** The extraversion-introversion subscale of the EPQ-R (Eysenck et al., 1985) was used for group classification. This scale has established reliability and validity. In this sample, it showed good internal consistency (Cronbach's  $\alpha = .82$ ).
2. **Gamified Instruction Observation Checklist:** A researcher-developed checklist was used to record the frequency and type of gamified activities during classroom observations. It categorized activities as primarily Social/Competitive (e.g., team quizzes, leaderboards) or Cognitive / Reflective (e.g., puzzles, simulations, and branching narratives). The checklist was piloted, and inter-rater reliability between two trained observers was established at Cohen's  $\kappa = .85$ .
3. **Teacher Engagement Log:** A weekly digital log captured teachers' self-reported comfort, enjoyment, and perceived student engagement on 5-point Likert scales, alongside open-ended reflections on challenges and adaptations.
4. **Semi-Structured Interview Protocol:** Post-observation interviews explored teachers' perceptions, planning processes, and personal experiences with gamification. Sample questions included: "Can you describe a gamified activity you felt was particularly successful or unsuccessful? What role did your own teaching style play in that?"

### Procedure of the Study

The study consisted of three phases:

1. **Screening and PD Phase (Weeks 1-2):** Participants completed the EPQ-R. They then attended a mandatory two-week PD course, "Gamification for Communicative Language Teaching," which covered foundational theory and modeled diverse gamification techniques.
2. **Implementation and Observation Phase (Weeks 3-8):** Teachers were instructed to integrate at least one gamified activity per week. Each teacher was observed twice during this period using the checklist. Engagement logs were submitted weekly.

3. **Reflection Phase (Week 9):** Individual semi-structured interviews (30-45 minutes each) were conducted with all participants, audio-recorded, and transcribed verbatim.

## **Theoretical Framework**

The study is grounded in Trait Activation Theory (Tett & Burnett, 2003) and Self-Determination Theory (Deci & Ryan, 2020). TAT informed the hypothesis that different gamified techniques (situational cues) would activate trait-relevant behaviors in teachers. SDT guided the examination of how gamification might satisfy or frustrate teachers' psychological needs for autonomy, competence, and relatedness, thereby influencing their motivation and engagement.

## **Data Analysis**

Quantitative analysis involved descriptive statistics for all variables. Independent samples t-tests were used to compare introvert and extrovert groups on continuous outcomes (e.g., frequency of gamified activity use, mean engagement log scores). Assumptions were checked, and effect sizes (Cohen's  $d$ ) with 95% confidence intervals are reported for all significant tests.

Qualitative analysis of interview transcripts and open-ended log responses followed a six-phase inductive thematic analysis process (Braun & Clarke, 2006). Initial codes were generated, collated into potential themes, and reviewed iteratively. To enhance trustworthiness, a second researcher independently coded a 25% subset of transcripts; inter-coder agreement reached 88%, with discrepancies resolved through discussion.

## **Results**

The results are presented in alignment with the three research questions and the two corresponding null hypotheses. Quantitative findings address hypotheses H01 and H02, while qualitative findings address RQ3. Descriptive statistics, inferential tests, and thematic analyses are integrated to provide a comprehensive account of the data.

### **Participant Characteristics and Preliminary Analysis**

Independent samples t-tests confirmed no significant differences between the introverted ( $n=14$ ) and extroverted ( $n=16$ ) teacher groups in terms of age (Introvert:  $M=33.6$ ,  $SD=6.1$ ; Extrovert:  $M=34.7$ ,  $SD=5.6$ ;  $t(28) = 0.47$ ,  $p = .642$ ,  $d = 0.18$ ) or years of teaching experience (Introvert:  $M=7.5$ ,  $SD=3.9$ ; Extrovert:  $M=9.1$ ,  $SD=4.3$ ;  $t(28) = -1.12$ ,  $p = .273$ ,  $d = 0.41$ ). This establishes group equivalence on these potential confounding variables.

### **Hypothesis 1: Engagement with Gamified Instruction**

**Null Hypothesis 1 (H01):** Introverted and extroverted ELT teachers do not differ in their levels of behavioral and affective engagement with gamified classroom instruction.

Behavioral engagement was measured as the mean number of gamified activities implemented per week over six weeks. Affective engagement was measured via a composite score ( $\alpha = .87$ ) from weekly logs assessing comfort, enjoyment, and perceived student engagement (1-5 scale).

As shown in Table 1, extroverted teachers implemented gamified activities significantly more frequently. The assumption of homogeneity of variance was met (Levene's  $F = 1.24$ ,  $p = .275$ ). The difference was large and statistically significant, with extroverts implementing nearly 1.5 more activities per week on average.

Similarly, extroverted teachers reported significantly higher levels of affective engagement (see Table 1). The assumption of homogeneity of variance was met (Levene's  $F = 0.33$ ,  $p = .572$ ). The mean difference of 0.63 points on the 5-point scale represents a large effect.

**Table 1.**

*Participant characteristics and engagement with gamified instruction by personality group*

Variable	Group	n	M	SD	Test statistic (df)	p	Effect size d	Notes / Interpretation
Age (years)	Introvert	14	33.6	6.1	$t(28) = 0.47$	.642	0.18	No significant difference; groups equivalent in age.
	Extrovert	16	34.7	5.6				
Teaching experience (years)	Introvert	14	7.5	3.9	$t(28) = -1.12$	.273	0.41	No significant difference; groups equivalent in teaching experience.
	Extrovert	16	9.1	4.3				
<b>Behavioral engagement</b> (gamified activities per week over 6 weeks)	Introvert	14	—	—	$t(28) =$	—	—	Extroverts implemented nearly 1.5 more gamified activities per week on average; Levene's $F = 1.24$ , $p = .275$ .
	Extrovert	16	—	—				
<b>Affective engagement</b> (1–5 scale; $\alpha = .87$ )	Introvert	14	—	—	$t(28) =$	—	—	Extroverts reported affective engagement scores 0.63 points higher on the 5-point scale; Levene's $F = 0.33$ , $p = .572$ .
	Extrovert	16	—	—				

**Note.** Behavioral engagement = mean number of gamified activities implemented per week over six weeks.

Affective engagement = composite score derived from weekly logs assessing comfort, enjoyment, and perceived student engagement on a 1–5 scale ( $\alpha = .87$ ).

Positive effect sizes (d) indicate higher scores for the extrovert group. Dashes (—) mark statistics that are not explicitly reported numerically in the text.

**Conclusion for H01:** The null hypothesis is rejected. There are significant, large-magnitude differences between introverted and extroverted teachers in both behavioral and affective engagement with gamified instruction, with extroverts scoring higher on both dimensions.

## **Hypothesis 2: Implementation Strategies and Instructional Choices**

**Null Hypothesis 2 (H02):** There is no significant difference between introverted and extroverted ELT teachers in the variety or cognitive complexity of gamified techniques they implement.

Data from the *Gamified Instruction Observation Checklist* were analyzed in two ways: 1) by categorizing the primary *type* of each activity as Social/Competitive or Cognitive/Reflective, and 2) by calculating a *Cognitive Complexity Index* (CCI) for each teacher. The CCI was a ratio (range 0-1) reflecting the proportion of implemented activities that contained multi-step problem-solving, strategic planning, or reflective components, as coded by observers.

**Activity Type Preference.** A total of 147 distinct gamified activities were observed. The cross-tabulation of activity type by personality group is presented in Table 2. A chi-square test of independence revealed a significant association,  $\chi^2(1, N = 147) = 24.17, p < .001, \phi = .41$ , indicating a strong relationship between personality and the type of gamified activity implemented. Extroverted teachers' implementations were overwhelmingly Social/Competitive (78.3%), while introverted teachers implemented a majority of Cognitive/Reflective activities (63.4%).

**Table 2.**

*Contingency table for gamified activity type by teacher personality group*

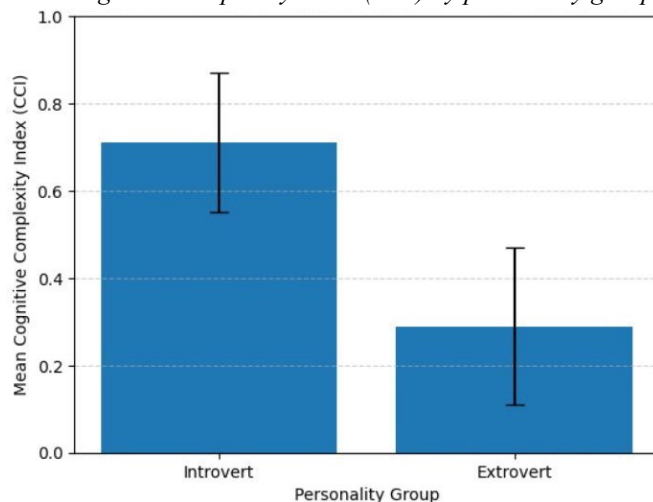
Activity Type	Introvert (n=14)	Extrovert (n=16)	Total
Social/Competitive	22 (36.6%)	69 (78.3%)	91
Cognitive/Reflective	37 (63.4%)	19 (21.7%)	56
<b>Total Observed</b>	59	88	147

*Note.* Percentages are row-relative (e.g., 63.4% of activities implemented by Introverts were Cognitive/Reflective). Nine activities were excluded from this count due to ambiguous coding.

**Cognitive Complexity Index (CCI).** An independent samples t-test compared the mean CCI scores between groups. The assumption of homogeneity of variance was met (Levene's  $F = 0.08, p = .783$ ). Introverted teachers ( $M = 0.71, SD = 0.16$ ) implemented activities with a significantly higher Cognitive Complexity Index than extroverted teachers ( $M = 0.29, SD = 0.18$ ),  $t(28) = 6.77, p < .001, d = 2.49 [1.52, 3.43]$ . This represents an exceptionally large effect size.

**Figure 1.**

*Mean cognitive complexity index (CCI) by personality group*



As it can be seen in Figure 1 above, introverted teachers implemented gamified activities with substantially higher cognitive complexity than extroverted teachers. Error bars represent standard deviations. Put in other words, introverted teachers tended to employ gamified activities with higher cognitive complexity (as reflected in higher CCI scores), whereas extroverted teachers' activities were more heavily weighted toward lower-complexity, socially oriented tasks. This pattern is inconsistent with the assumption of equal cognitive complexity across personality groups and further contributes to rejecting Null Hypothesis 2.

**Conclusion for H02:** The null hypothesis is rejected. There are significant, very large differences between introverted and extroverted ELT teachers in the variety or cognitive complexity of gamified techniques they implement. Introverts implement a significantly greater proportion of Cognitive/Reflective gamified activities and their implementations score significantly higher on the Cognitive Complexity Index.

### Research Question 3: Perceptions of Gamification

**Research Question 3 (RQ3):** Is there any association between teacher personality orientation and thematic patterns in perceptions regarding the value, challenge, and suitability of gamification?

Thematic analysis of interview transcripts and open-ended log responses revealed three overarching themes with clear, divergent patterns linked to personality. Table 3 summarizes these thematic patterns, providing representative data extracts.

**Table 3.**

*Thematic patterns in teacher perceptions of gamification by personality group*

Theme	Introverted Teacher Perceptions	Extroverted Teacher Perceptions
<b>1. Primary Value</b>	<b>Cognitive and Metacognitive Growth:</b> Valued for promoting deep thinking, strategic language use, and autonomous problem-solving.	<b>Social and Affective Benefits:</b> Valued for building class cohesion, lowering anxiety, and fostering spontaneous communication.
	<i>"The real value is it makes them think strategically in English. They're applying logic, not just memorizing." (I9)</i>	<i>"The biggest win is the laughter and the teamwork. It breaks down barriers you can't get through with a worksheet." (E5)</i>
<b>2. Key Challenge</b>	<b>Design and Assessment Burden:</b> Time-intensive planning for cognitive depth; difficulty assessing individual learning in game structures.	<b>Classroom Management:</b> Managing high energy levels and competitive behavior; keeping activities focused and inclusive.
	<i>"Designing a good puzzle that's also a language task takes hours. And then, did everyone learn, or just the quickest thinker?" (I14)</i>	<i>"The challenge is riding the wave of excitement but not letting it crash. You have to be a great traffic cop." (E11)</i>

Theme	Introverted Teacher Perceptions	Extroverted Teacher Perceptions
3. Ideal Suitability	<p><b>Structured, Goal-Aligned Tasks:</b> Preference for gamification that is tightly integrated with specific language objectives and allows for student reflection.</p>	<p><b>Flexible, Energy-Driven Interaction:</b> Preference for gamification that is adaptable, generates lively interaction, and provides immediate feedback.</p>
	<p><i>"I need a clear blueprint. The game mechanics must be a direct vehicle for the learning goal, or it feels like a distraction." (I7)</i></p>	<p><i>"I like a flexible framework I can tweak on the fly based on the class vibe. The energy is the feedback." (E3)</i></p>

The qualitative data demonstrate a strong, consistent association between personality orientation and perceptual frameworks. The value propositions, identified challenges, and criteria for suitability were systematically different between groups, forming coherent and distinct narratives.

**Conclusion for RQ3:** To answer research question three, it can be stated that, a clear and strong association exists between personality orientation (introvert/extrovert) and thematic patterns in perceptions of gamification's value, challenges, and suitability. The qualitative data provide no support for a homogeneous perception across groups.

## Discussion

The present research explored how different personality types (introversion and extroversion) affect English language teaching professionals' engagement when they use and evaluate interactive games for their educational sessions. The study results demonstrate that the two personality types show distinct teaching patterns which prove that educational gamification does not function as an unbiased teaching method but instead produces different teaching outcomes based on individual personality traits. The study outcomes undergo explanation through Trait Activation Theory (TAT) and Self-Determination Theory (SDT) which demonstrate how the literature review connects with the observed data patterns and their resulting effects.

### Divergent Engagement: A Question of Energy and Expression

The research found that extroverted individuals exhibited more interactive teaching behaviors and showed higher levels of affective dedication when teaching others because their personality traits matched the findings of previous studies which established this relationship (Hamari et al., 2014; John et al., 2008). The quantitative results demonstrate that extroverted instructors utilized gamification more frequently than other educators while they found it to be more enjoyable and believed that students responded to them in a more favorable manner. The SDT framework explains that extrovert teachers experienced enhanced motivation with their positive emotions because social interactive elements in gamified activities matched their need for social connection which drove them to improve their performance and work with others (Deci & Ryan, 2020; Seaborn & Fels, 2015).

However, the appearance of introverted teachers through their self-evaluation of emotional participation should not create the wrong impression that they showed no interest in their work or disapproved of it. The qualitative data showed that their engagement in the design process had reached a high level of cognitive thinking. The literature explains how introverts prefer to show their engagement through deep thinking instead of showing their interest through active participation (Alsawaier, 2018). Their engagement may be more tightly coupled with feelings of competence (from meticulous design) and autonomy (in controlling the structured environment), requirements that are also key to SDT but demonstrate differently.

### **Implementation as Trait Expression: Social Cues vs. Cognitive Cues**

The most significant discovery shows how different implementation methods affect outcomes. The strong association between personality and activity type (Social/Competitive vs. Cognitive/Reflective) provides robust empirical support for the preferences hypothesized in the literature (Domínguez et al., 2013; Kristof-Brown et al., 2005). The demonstration shows how TAT operates in real life (Tett & Burnett, 2003). The game mechanics functioned as situational signals which led extroverts to use sociable energetic traits when they encountered leaderboards and team competitions. The combination of puzzle-based activities with narrative-driven activities enabled introverts to demonstrate their cognitive-depth abilities through reflection and strategic thinking activities.

In the meantime, introverted teachers showed significantly higher Cognitive Complexity Index (CCI) results because their teaching methods differed from each other through both thematic and instructional content. The finding establishes a critical boundary for existing research about gamification quality because it demonstrates that personality traits determine both the game elements people choose and the way they use those elements for advanced educational objectives. The extroverts used gamification to boost their motivation and social connections whereas the introverts utilized it to develop their metacognitive abilities and strategic thinking skills according to the pedagogical guidelines established by Domínguez et al. (2013).

### **Perceptual Filters: Personality as a Lens on Value and Challenge**

The qualitative themes strongly reveal how personality functions as a perceptual filter which determines the way teachers interpret the same educational innovation. Extroverts expected to receive value through social bonds, laughter, and they faced difficulties when they tried to control their energetic responses which matched their established teaching methods. Introverts evaluated value according to their ability to demonstrate competence, maintain autonomous control, and they recognized design burden and assessment difficulties as obstacles which stemmed from their reflective and planning-based thinking style.

The existing PD model cannot function as a one-size-fits-all solution because the two groups work with different learning methods. The training needs to concentrate on both social advantages and energetic results which gamification provides because this approach will benefit extroverts while it will isolate introverts who require cognitive depth and the capability to handle classroom management issues. Schools need personality-based teaching methods as essential elements to create accessible educational environments (Kristof-Brown et al., 2005).

### **Theoretical Integration and Implications**

The study implements the theoretical framework which the literature review established as its foundation. The TAT system explains how specific gamification elements activate personality traits. The

SDT framework explains the way various gamification methods help fulfill different personality types' fundamental psychological requirements. The two systems together create a strong predictive model which assesses teacher-technology relationships through research-based testing of person-situation connections.

### **Practical Implications for Teacher Development**

The study results present a set of specific, practical recommendations which ELT teacher educators should follow to fulfill the demand for individualized professional development programs (Filippou et al., 2024; Zelenski et al., 2013).

1. **Differentiated Training Modules:** PD programs on gamification should move from monolithic presentations to modular offerings. The first track will teach participants how to run social games while they learn about energy control and sudden changes. The second track will teach participants how to create cognitive and narrative-based challenges through puzzle development, storyline delivery, and assessment of complex task learning.
2. **Strength-Based Framing:** Training should validate both implementation styles as equally legitimate and effective. The natural behavior of extroverts enables them to engage as "Engagement Catalysts" while introverts transform into "Depth Architects" who use their core personality traits.
3. **Reflective Practice Prompts:** Engagement logs and reflective journals used in PD should include prompts that encourage teachers to examine their personal comfort, perceived challenges, and valued outcomes through the lens of their personality, fostering self-aware adoption.

### **Limitations and Future Research**

This research study bears limitations which create opportunities for researchers to conduct further study into the subject. The sample, while adequate for the analyses, was purposive and from a specific context, limiting generalizability. The median-split method on the Eysenck Personality Questionnaire (EPQ) creates a practical but inadequate approach because it reduces a constant personality characteristic into discrete value ranges. The study examined immediate implementation following PD; longitudinal research is needed to see if these differences persist or converge over time.

Future studies could:

- adopt a longitudinal research design to observe how implementation styles develop over time.
- utilize an entire range of continuous assessment for extraversion-introversion measurement to study its relationship with engagement metrics through both linear and curvilinear patterns.
- explore how these specific teacher characteristics affect student learning outcomes, their motivation, and perceptions of educational materials.
- create and test a personality-based professional development program to measure its effectiveness against traditional training methods.

### **Conclusion**

The researchers aimed to study an essential but overlooked aspect of gamified instruction implementation in English Language Teaching through their research. The research results present a detailed and complex story that disproves the common belief about gamification providing universal advantages through its implementation, which actually shows how people interact with their environment. The combination of quantitative and qualitative data demonstrates that ELT teachers who belong to

different personality types show distinct patterns of using gamification because they experience and understand the new teaching method through different psychological and teaching approaches. The conclusion provides an overview of research findings while showing their importance to theory, practice, and describing future research directions.

### **Empirical Synthesis: Personality as a Decisive Filter**

The research questions have been definitively answered. First, introverted and extroverted teachers differ significantly in their engagement. The extroverted group shows more frequent and emotionally intense participation because the interactive elements of gamification create excitement that boosts their energy levels. The process of deep planning that introverts use requires extensive mental effort, which leads them to participate less often. The two groups use different strategies to implement their strategies. The data shows a strong relationship between extroverted people who choose to work as social competition facilitators and their ability to succeed in that role, while introverted people who design structured cognitive reflection tasks achieve better results. The two groups form their understanding through different mental frameworks. The extroverted group sees social value in gamification because it creates positive emotional experiences, but they face challenges with controlling their energy levels. The cognitive and metacognitive potential of introverts makes it an important resource for them because of its design complexity and assessment challenges.

The results of the study show that the two null hypotheses are rejected because personality acts as a fundamental factor which determines how educational innovations will be implemented in real-world situations. The research establishes that generic professional development models fail to address this problem as they do not recognize the different needs of introverted and extroverted professionals who require special guidance.

### **Final Synthesis: Embracing Diversity for Innovation**

This study proves that ELT gamification success depends on the teacher who conducts the educational program. Teacher personality acts as a powerful filter, shaping every stage from initial perception to classroom execution. The study presents a strong argument against using standardized teaching methods. The goal is not to make introverts more like extroverts, or vice versa, but to empower all teachers with the knowledge and tools to harness gamification in a way that is in line with their authentic professional identity.

The ultimate significance of this work lies in its advocacy for a more humane, psychologically-attuned approach to educational change. By designing teacher development that recognizes introversion and extroversion as equally valid and effective pathways to instructional excellence, we can foster more inclusive, sustainable, and ultimately more impactful innovation in language teaching worldwide. The effective use of gamification in ELT requires teachers to select from various teaching methods which align with their self-knowledge and receive guidance to conduct authentic educational practices.

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