

A Problem-based and Task-based Integrated Instructional Approach to the Development of Translation Creativity and Quality¹

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Abstract

This study investigated the impact of an integrated problem-based and task-based learning (PBL-TBL) approach on the development of translation creativity and translation quality among undergraduate translator trainees. A quasi-experimental pretest-posttest design was employed with 33 fourth-year translation students at Jahad Daneshgahi University of Ahvaz. The 15-week intervention consisted of 15 literary translation tasks designed around authentic, ill-structured objective translation problems as defined by Nord, implemented collaboratively in small groups following a structured problem-based learning cycle. Translation creativity was measured using an adapted model combining acceptability, novelty, and Holst's eight-level ordinal hierarchy of creative shifts; the reported percentages represent the proportion of Units of Creative Potential successfully resolved through acceptable, novel solutions. Translation quality was assessed by means of Waddington's holistic rubric. Repeated-measures ANOVA showed an increase in creativity scores from pre-test (4.44%) to post-test (56.24%), with a large effect size. Quality scores also improved from 5.30 out of 10 to 8.36, and 72.7% of participants achieved 'Successful' ratings in the post-test. While the absence of a control group is acknowledged as a limitation, the magnitude and timing of the observed gains suggest that maturation effects alone are unlikely to account for the improvements. The findings appear to indicate that a structured PBL-TBL curriculum may be associated with noticeable gains in translation creativity and quality, offering support for the view that creativity is a teachable competence.

Keywords: Creative shifts; Problem-based learning; Task-based learning; Translation creativity; Translation quality; Translator training

1. This paper was received on 19.01.2026 and approved on 18.04.2026.

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1. Introduction

The process of translation has been described as consisting of two main intermittent processes: the intuitive and the controlled (Kiraly, 1995, as cited in PACTE, 2017, p. 6). While intuitive processing flows efficiently, the controlled mode is blocked by translation problems that demand creativity (Kusssmaul, 1995). At such points routine translation strategies prove insufficient, requiring the translator to move beyond boundaries to produce an acceptable and often aesthetically pleasing solution. At such points, the translator's creativity becomes the decisive factor. This creativity is defined as a combination of novelty (originality, uniqueness) and acceptability (appropriateness, fit for purpose), involving the generation of new and elegant solutions that depart from the source text while ensuring alignment with the target culture and context (Guerberof-Arenas & Toral, 2022).

Problem-solving occupies a pivotal position in PACTE's (2017) translation competence (TC) model and is regarded as a key TC indicator (Orozco & Hurtado Albir, 2002). In parallel, translation research has long associated problem-solving with creativity (Kusssmaul, 1995). This linkage has gained renewed attention in recent TS scholarship; for example, Jiménez-Crespo (2025) redefines TC for the AI era by foregrounding creativity as a uniquely human skill that warrants deliberate pedagogical attention. Despite these established connections, and despite the growing recognition of the importance of creativity in professional translation, translation education research has not yet empirically investigated how problem-based instructional activities influence the development of translational creativity. This constitutes the precise gap that the present study addresses.

The present research builds on the relationship between problem-solving and creativity in translation, a point explicitly referred to by Kusssmaul (1995) in his concept of "non-routine process[es] ... which usually create problems and require creativity" (pp. 39–40). Building on problem-based learning (PBL) methodology and González-Davies's (2004) task-based learning (TBL) approach to curriculum design, a structured curriculum was developed to empirically explore the possibility that translation teaching based on a PBL instructional approach fosters the development of trainees' creativity. Additionally, given that translation teaching ultimately aims to improve quality (Schäffner, 1997), the study also examines PBL's impact on translation quality. Hence, the purpose is two-fold: to investigate PBL's contribution to developing translation creativity and its effect on translation quality.

The study addresses the following two research questions:

1. To what extent does the integrated problem-based and task-based instructional approach improve translation creativity?
2. What is the effect of the integrated problem-based and task-based instructional approach on translation quality?

2. Literature Review

2.1. Problem-Based Learning and Translation Pedagogy

PBL is a teaching approach that has only sporadically entered TS. Originating in medical education at McMaster University in the 1960s (Xiang, 2024), it emerged as a response to traditional lecture-based methods, aiming to foster critical thinking and independent learning (Savery, 2015). Newman (2005) identifies five essential features: facilitation, an explicit process, problems to stimulate learning, small group work, and assessment (pp. 15–16). The teacher acts as a facilitator; the "problem" activates prior knowledge and motivation. Importantly, Newman (2005) considers creativity as one capability PBL develops (p. 13). Inoue (2005) summarizes four core features: a central challenging problem, authenticity, learner autonomy, and the teacher as facilitator. Other features include self-directed learning, collaboration, and reflection (Ansarian & Teoh, 2018, pp. 15–22).

Several studies have applied PBL to translator training. Inoue (2005) conceptualized problems as knowledge gaps using KND charts. Kerkkä (2009) designed a seven-step framework where students subjectively defined problems. Mellinger (2018) implemented PBL in computer-assisted translation pedagogy, enhancing instrumental sub-competence. Xiang (2024) applied PBL to specialized translation, addressing domain-specific problems. Gregorio Cano (2023) combined PBL with reflective practices, with mixed results. Altuwairesh (2024) used metacognitive questionnaires within a PBL framework, effectively enhancing strategic sub-competence. Hu (in press) adopted a Talk-Driven collaborative problem-solving model and found it led to fewer translation errors.

While existing studies have ascertained PBL's usefulness in developing trainees' competence, they share a significant limitation: the concept of translation problem remains subjective, with each study defining problems differently, as knowledge gaps, textual complexity, technological issues, or domain-specific challenges. The impact of PBL on translators' creative development also remains largely unexplored. Through adopting Nord's (2005) objective translation problems taxonomy, comprising pragmatic, convention-related, text-specific, and linguistic

categories, the present study accounts for the former shortcoming and extends the investigation to creativity development.

2.2. Creativity and its Measurement in Translation Studies (TS)

Creativity has been viewed as a complex construct defying accurate measurement, requiring a clear definition of its components (Angelelli, 2009). In general, creativity is defined as “the drive to come up with something that is new and surprising and that has value” (Du Sautoy, 2019, p. 4). In TS, translation creativity is similarly defined as solutions that “have to be novel and depart from conventional translation behavior, but should also render meaning accurately and give solutions appropriate to a certain textual, situational and cultural context” (Rojo, 2017, p. 253). Bayer-Hohenwarter and Kussmaul (2020) explain that creative translation involves changes compared to the ST, bringing something new and appropriate to the task (p. 312). Kussmaul (2000) identifies three stages: (i) existence of a translation problem, (ii) solved by something new, and (iii) approved by an expert. Bayer-Hohenwarter (2013) defines translation creativity as flexible thinking and the capacity to adopt broad-based strategies to tackle problems in a novel way. Creativity is thus a function of both novelty and acceptability.

In TS, creativity has been investigated from two perspectives: psychological (creative intelligence as a personal trait) and product/process. Several psychological tests have been developed including K-DOCS, TTCT, Abedi, and CREA. However, López et al. (2021) found that CREA results show incongruent relation with novelty in translation, confirming that psychological models may not validly represent translators’ creativity.

Following Bayer-Hohenwarter’s (2010) distinction, the present study focuses exclusively on product creativity: “indicators that are found only with target texts” (p. 97). Two prominent product-based models have been proposed. Bayer-Hohenwarter’s (2013) model evaluates creativity at discrete ST units, with acceptability as prerequisite, flexibility measured through shifts (1 point per valid shift), and novelty assessing uniqueness (2 points for unique, 1 for rare solutions). Guerberoof-Arenas and Toral (2022) combine acceptability (whole-text error analysis) and novelty (creative shifts applied to UCPs), but unlike Bayer-Hohenwarter, they do not differentiate between novelty and creative shifts.

The present study proposes a new creativity evaluation model blending the views of Bayer-Hohenwarter (2013), Holst (2010), Kussmaul (2000) and PACTE (2009). Theorists agree on three fundamental features: acceptability, novelty, and creative shifts. The model conceptualizes creativity as multidimensional and relative,

measured at the level of Units of Creative Potential (UCPs): source text segments that resist literal transfer and demand creative solutions (Guerberof-Arenas & Toral, 2022). Acceptability serves as a gatekeeping criterion, assessed on meaning (accurate reproduction of source content), function (fulfilment of communicative purpose, brief, and genre conventions), and language (grammatical, syntactic, and orthographic correctness as well as natural fluency) (PACTE, 2009). Only acceptable solutions (score = 1) proceed; non-acceptable (score = 0) are excluded. In cases of creative substitution and deletion, acceptability is judged on function and language only. Novelty is binary: 0 for literal/conventional solutions; 1 for solutions that depart observably from literal meaning through reformulation, restructuring, or re-conceptualization. Creative shifts follow an eight-level ordinal hierarchy from least to most creative: Explicitation (1), Condensation (2), Deletion (3), Addition (4), Paraphrase (5), Adaptation (6), Permutation (7), Substitution (8). Not every shift is creative; it must also be acceptable and novel. Once a solution passes the acceptability threshold, the creativity score is calculated according to the following formula.

$$\text{Creativity Score} = \text{Acceptability (0–1)} + \text{Novelty (0–1)} + \text{Creative Shift (1–8)}$$

The maximum score per UCP is 10 points, reflecting the highest shift in Holst's model. If multiple creative shifts overlap in one UCP, each shift receives its separate point (acceptability and novelty scored once). Overall creativity is the mean across all UCPs:

$$\text{Overall Creativity} = (\text{Sum of Creativity Scores}) / (\text{Number of UCPs})$$

The creativity measurement model employed in this study was developed iteratively prior to the study, with each component systematically adapted for operationalization. Novelty is treated as a binary construct because the relevant distinction in translation is between routine and non-routine processing (Kussmaul, 1995; Bayer-Hohenwarter, 2013), with the degree of creativity subsequently captured through the ordinal hierarchy of creative shifts. Acceptability is likewise operationalized as a binary gatekeeping criterion, as a solution that is only partially acceptable fails to meet the threshold of communicative adequacy required for creativity (Bayer-Hohenwarter & Kussmaul, 2020), and the semi-acceptable category in the original PACTE model introduces ambiguity that may compromise inter-rater reliability. The additive model (Acceptability + Novelty + Shift Type) is preferred over multiplicative or standardized alternatives because acceptability functions as a prerequisite rather than a dimension that interacts multiplicatively with the other

components, and because the ordinal nature of the shift hierarchy does not assume equal intervals between categories. The model was piloted with two independent assessors, yielding high inter-rater agreement (0.85), indicating that the operational definitions and scoring criteria were sufficiently clear and robust for application to the main data.

Table 1. Holst's Model of Creative Shifts

Shift	Definition
8. Substitution	Modifying the meaning
7. Permutation	Translating in a different place
6. Adaptation	Recreating the effect, entirely or partially
5. Paraphrase	Translating rather freely
4. Addition	Adding a unit of meaning
3. Deletion	Leaving out a unit of meaning
2. Condensation	Translating in a shorter way, which may involve implication (making explicit information implicit)
1. Explication	Making implicit information explicit

2.3. Translation Quality

In addition to developing translation creativity, the present study aims to investigate the impact of PBL on translation quality. The rationale is twofold: (i) the ultimate objective of translation teaching is the enhancement of product quality (Schäffner, 1997), and (ii) creativity and quality are two components of TC (Göpferich, 2009; PACTE, 2017). That is, they affect each other. Hence, studying the impact of one sub-competence on the other is a logical endeavor. Translation quality is assessed using Waddington's (2001) holistic model, selected for its practicality. Waddington (2001) found no significant difference between holistic and analytic approaches in terms of validity and reliability. The model operationalizes quality through two criteria: accuracy (content transfer) and expression (target language naturalness), assessed on a five-level scale (0–10), where Level 5 (9–10) represents complete transfer and native-like expression, and Level 1 (1–2) indicates inadequate transfer. As Stansfield et al. (1992) and Waddington (2001) confirmed, these criteria align with what translation teachers consider translation competence.

3. Method

3.1. Research Design

This study employed a quasi-experimental pretest-posttest design with a single group of 33 fourth-year undergraduate translation students at Jahad Daneshgahi University of Ahvaz. The 15-week intervention consisted of 15 literary translation

tasks, implemented collaboratively in small groups following a structured PBL cycle. Translation creativity was measured using the adapted model described in Section 2.3. Translation quality was assessed with Waddington's holistic rubric. Data were collected at four time points: pre-test, two portfolio tasks (Tasks 9 and 13), and post-test. Repeated measures ANOVA was used to analyze changes over time.

3.2. Participants

The study initially included 38 undergraduate students (25 females, 13 males) enrolled in the Annotated Translation course. Four students were excluded for not achieving the minimum required score on the English proficiency test, and one for irregular attendance, resulting in a final sample of 33 students (mean age = 22.18). All students were in their fourth year. Homogeneity in English proficiency was confirmed via the Oxford Placement Test (score ≥ 48 , C1 level).

3.3. Instruments and Instructional Material

Six instruments were employed: (1) Oxford Placement Test, (2) a pre-test translation task, (3) a researcher-designed pamphlet containing 15 problem-based tasks, (4) the Written Protocol (WP) table (González Davies & Scott-Tennent, 2005) to document problem-solving, (5) a post-test translation task, and (6) group portfolios compiling all tasks.

The C1 proficiency threshold was selected as inclusion criterion to ensure that participants possessed sufficient linguistic competence to engage meaningfully with creativity-demanding literary translation tasks. This inclusion criterion also ensured that the observed improvements in translation creativity could be attributed to the instructional intervention rather than to gains in basic language proficiency during the study period. The pamphlet consisted of 15 tasks sequenced to foster creativity. Tasks included translating neologisms, domesticating Harry Potter characters' names, translating personification, idiolect, tone, character's voice, cultural irony, and figurative language. The WP table required students to identify the problem, propose solutions, list advantages/disadvantages, state the final version, and provide justification. The instructional intervention spanned one academic semester. The researchers-designed curriculum consisted of literary translation tasks, each structured around authentic, ill-structured translation problems requiring creative shifts. The use of collaborative portfolio tasks and individual pre-/post-tests reflects a deliberate design choice aligned with the study's pedagogical and methodological objectives. Collaborative tasks operationalize the social-constructivist principles underpinning the PBL-TBL approach, enabling peer scaffolding and collective problem-solving within

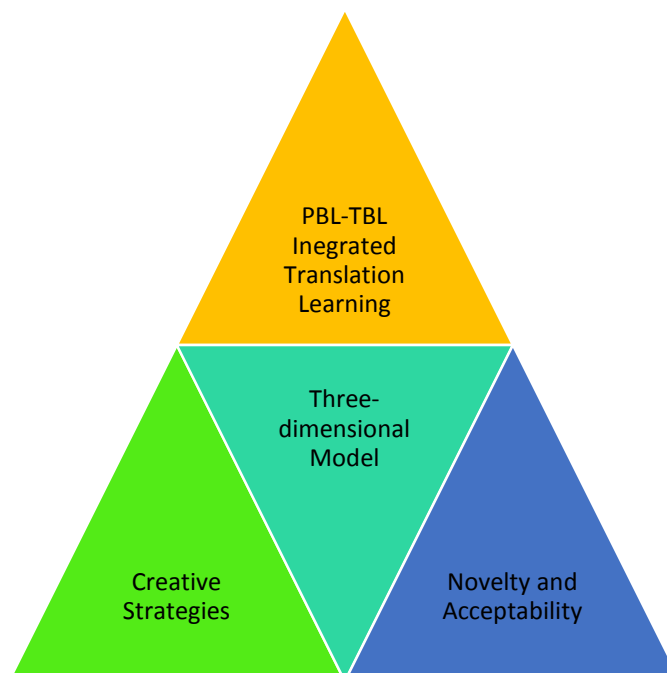
the Zone of Proximal Development (Kiraly, 2014), while individual assessments measure the extent to which collaborative gains are internalized and transferred to independent performance. This dual design serves complementary purposes capturing both the learning process and its durable outcomes. It is acknowledged, however, that the differing conditions may influence performance, as collaboration may enhance translation quality relative to individual work, and this constitutes a limitation of the study. The longitudinal design, which tracks progress across multiple phases, partially mitigates this limitation by enabling comparison of individual and collaborative performance within the same participants.

The pre-test and post-test texts were selected according to explicit criteria to ensure comparability while preventing test-retest effects. Both are twentieth-century literary excerpts (Jackson's *The Lottery* and Joyce's *Dubliners*) that share similar stylistic demands, linguistic complexity, and continuous creative challenges, with both requiring non-literal rendering across multiple Units of Creative Potential identified through Nord's (2005) taxonomy. The use of different texts was motivated by the need to avoid memory effects that would confound genuine creativity measurement, consistent with established conventions in translation process research (Göpferich, 2009; PACTE, 2017). Together, these considerations ensure that observed improvements can be attributed to the instructional intervention rather than to variations in task characteristics.

3.4. Theoretical Framework

The theoretical framework of this study is a three-dimensional model integrating pedagogical theory, creativity indicators, and procedural strategies. Pedagogically, it operationalizes PBL within a TBL curriculum to systematically cultivate translation creativity. For measuring the creative product, the framework adopts an adapted model synthesizing Bayer-Hohenwarter's (2013) two-dimensional conceptualization of creativity (novelty and acceptability) with PACTE's (2009) operationalization of acceptability through three indicators (meaning, function, and language). To analyze the specific procedures through which creativity is enacted, the framework incorporates Holst's (2010) ordinal taxonomy of creative shifts ranging from explicitation to substitution, which provides a hierarchical tool for categorizing translators' strategic interventions during problem-solving.

Figure 1. Three-Dimensional Model



The PBL-TBL instructional approach operationalizes the three-dimensional framework by guiding students through structured problem-solving tasks where translation problems (UCPs) trigger creative engagement. As students work collaboratively to identify and resolve these problems, they apply Holst's creative shifts, generating solutions that are subsequently evaluated against the dual criteria of novelty and acceptability. The WP table makes this interaction explicit, requiring students to document their proposed solutions, justify their choices, and reflect on the creative strategies employed, thereby integrating measurement criteria into the learning process itself. Throughout the semester, the progressive sequencing of tasks ensures that students systematically practice balancing novelty with acceptability across increasingly demanding creative problems.

The PBL-TBL integration was selected because PBL directly addresses the well-documented relationship between translation problems and creativity (Bayer-Hohenwarter & Kussmaul, 2020; Kussmaul, 1995), while TBL provides the structured, collaborative framework necessary for its systematic implementation. TBL enables clearly defined, creativity-oriented learning objectives; supports collaborative problem-solving consistent with social constructivist principles (Kiraly, 2014); and offers phased activities that mirror the cognitive stages of creative problem-solving (Mackenzie, 1998). These two approaches are complementary: PBL supplies the conceptual foundation by defining translation problems and creative strategies, while TBL operationalizes these principles through sequenced, practically achievable tasks.

This synthesis addresses the limitations of each approach when used in isolation, resulting in a coherent pedagogical framework optimally suited to developing translation creativity.

3.5. Data Collection Procedures

The pre-test was administered at the beginning of the semester to establish baseline. Students translated a 307-word literary excerpt individually at home. Following the pre-test, the instructional intervention was implemented across fifteen sessions. Each week, students engaged in one task collaboratively in groups of four, documenting their reasoning in the WP table. Each weekly session followed a five-phase PBL cycle: (1) problem identification, (2) collaborative solution brainstorming, (3) collaborative WP-table completion, (4) cross-group peer review, and (5) final revision. The facilitator posed guiding questions without providing ready-made solutions. A table listing the curriculum tasks in the order they were carried out is provided in the appendices. At the conclusion of the semester, the post-test was administered using a 240-word literary excerpt, requiring students to apply PBL principles. Two portfolio tasks (Task 9 and Task 13) were also selected to capture longitudinal progress.

All translations were evaluated by two independent assessors with PhDs in TS (with 14 and 3 years of teaching experience), who were trained on the assessment rubrics and achieved inter-rater agreement above 0.85. The inter-rater reliability was calculated using Cohen's Kappa.

3.6. Data Analysis

To analyze the development of creativity and quality over time, a Repeated Measures ANOVA was conducted on the scores from the four time points (pre-test, portfolio 9, portfolio 13, post-test). The repeated-measures ANOVA was performed on group-level data rather than individual participant data. That is, to maintain a consistent unit of analysis across all phases, individual scores were aggregated to the group level for longitudinal comparison. This occurred because the instructional intervention involved collaborative work in fixed groups of 4 students, making the group (not the individual student) the appropriate unit of analysis for the longitudinal comparisons. This design allowed the study to examine both the collaborative learning process fostered by the PBL-TBL cycle and the extent to which the possible gains transferred to independent individual performance at the course's conclusion. All statistical analyses were performed using SPSS version 26, and assumptions for parametric tests (normality, sphericity) were checked prior to analysis.

4. Results

This section reports the statistical findings pertaining to the research questions: (1) to what extent the integrated problem-based and task-based instructional approach improves translation creativity, and (2) what effect it has on translation quality.

4.1. Development of Translation Creativity

Table 2 presents the mean creativity scores across the four phases.

Table 2. Mean Translation Creativity Scores Across Phases

Phase	Mean Creativity (%)	Standard Deviation
Pre-test (individual)	4.44	8.63
Task 9 (collaborative)	36.71	16.47
Task 13 (collaborative)	58.82	7.18
Post-test (individual)	56.24	27.81

The repeated-measures ANOVA revealed a significant effect of phase, $F(3, 24) = 38.15$, $p < .001$, partial $\eta^2 = 0.83$ (the denominator of 24 reflects the 9 collaborative groups used as the unit of analysis, rather than the 33 individuals, to account for teamwork interdependence). Bonferroni-corrected post-hoc comparisons showed that the pre-test mean was significantly lower than Task 9 (mean difference = 29.91%, $p < .001$), Task 13 (52.02%, $p < .001$), and the post-test (49.44%, $p < .001$). Task 9 was significantly lower than Task 13 (22.11%, $p < .01$), but not significantly different from the post-test (19.53%, $p = 0.08$). Task 13 did not differ significantly from the post-test (2.58%, $p = 0.48$).

Analysis of creative strategies (Holst, 2010) showed that paraphrase was the most frequently used shift across all phases (12 instances in the pre-test, 33 in Task 9, 95 in Task 13, 70 in the post-test). Adaptation appeared mostly in Task 13 (11 instances), while addition and explication occurred less frequently. Higher-order shifts (permutation, substitution) were rarely observed.

4.2. Effect on Translation Quality

Table 3 displays the mean translation quality scores across the four phases.

Table 3. Mean Translation Quality Scores Across Phases

Phase	Mean Quality (/10)	Standard Deviation
Pre-test	5.30	1.89
Task 9	8.33	1.31

Task 13	9.00	0.89
Post-test	8.36	1.79

The repeated-measures ANOVA yielded a significant main effect of phase, $F(3, 24) = 22.93$, $p < .001$, partial $\eta^2 = 0.74$. Post-hoc comparisons indicated that the pre-test mean was significantly lower than Task 9 (mean difference = 3.03, $p < .001$), Task 13 (3.70, $p < .001$), and the post-test (3.06, $p < .001$). No significant differences were found between Task 9 and Task 13 (0.67, $p = 0.12$), between Task 9 and the post-test (0.03, $p = 0.98$), or between Task 13 and the post-test (0.64, $p = 0.21$). In the post-test, 24 out of 33 participants (72.7%) achieved scores in the "Successful" range (9–10).

5. Discussion

The present study examined the extent to which a PBL-TBL approach was associated with improvements in translation creativity and translation quality among undergraduate translator trainees. The findings indicate gains across both dependent variables following the intervention. Improvements in creativity scores were observed from the pre-test (4.44%) to the post-test (56.24%), with the largest gains occurring in the collaborative tasks (Task 9: 36.71%; Task 13: 58.82%). These gains were sustained in the individual post-test. This pattern suggests that the PBL-TBL approach may have contributed to fostering translation creativity, with collaborative problem-solving appearing to scaffold creative development that was subsequently maintained in independent performance.

The pedagogical design (i.e., embedding PBL within a TBL curriculum) appears to have provided conditions conducive to creativity development. PBL confronts learners with ill-structured problems requiring non-routine solutions (Hewson, 2016; Kussmaul, 1995), while the sequential task structure progressively exposed students to increasingly complex creative challenges. The structured phases of problem analysis, strategy brainstorming, peer review, and reflective justification gave students repeated opportunities to generate and refine novel yet acceptable solutions. This aligns with the view that creativity in translation is teachable and competence-dependent (Bayer-Hohenwarter, 2013).

Paraphrase was the most frequently used creative strategy across all phases, while higher-order shifts (i.e., adaptation, permutation, and substitution) were used much less frequently. This suggests that while students became comfortable with flexible rewording, the full repertoire of creative strategies remained underutilized.

Quality scores also showed improvements following the intervention, from a pre-test mean of 5.30/10 to a post-test mean of 8.36/10. Notably, quality gains were achieved early (by Task 9) and then stabilized, while creativity continued to improve from Task 9 to Task 13. This suggests that after a certain point, further increases in creativity did not translate into proportionate quality improvements, supporting the view that creativity must be balanced with the functional requirements of the translation task (Bayer-Hohenwarter & Kussmaul, 2020). The standard deviation for quality was lowest in Task 13 ($SD=0.89$), indicating that collaborative work led to consistent quality across groups, while the post-test SD (1.79) reflected greater individual variation. Notably, 72.7% of participants achieved "Successful" quality scores (9–10) in the post-test. These results align with Hu's (in press) study, which found that problem-based activities effectively reduce translation errors.

6. Limitations

Several limitations should be considered. The absence of a control group represents a methodological constraint that precludes causal claims. While a maturation effect alone appears insufficient to explain the magnitude of observed improvements—creativity scores increased nearly eight-fold within the first half of the semester, and the strategic repertoire expanded from three shift types in the pre-test to five types by Task 13—the findings should be interpreted with caution.

The sample consisted of 33 participants from a single Iranian university, which substantially limits the generalizability of the results. The specific curricular structure, teaching norms, and cultural characteristics of Iranian higher education may have influenced the outcomes, and the findings may not transfer to other institutional contexts, language pairs, or student populations. The study was conducted in a virtual format due to institutional policies, which may have reduced spontaneous brainstorming and informal exchange typical of face-to-face interaction. The post-test used a short source text consisting of only three sentences, which may not fully capture the range of participants' creative abilities. The study also did not control for individual differences such as prior translation experience or personality traits, which may have influenced outcomes. Future research with larger, more diverse samples, control groups, and longer texts is needed before broader claims can be made.

7. Pedagogical Implications

Several recommendations for translator trainers emerge from the findings. First, trainers are encouraged to consider integrating PBL and TBL explicitly. The 15-

task structure, with problem analysis, brainstorming, peer review, problem-solving and reflection, appeared effective in this context. Trainers may adopt a similar sequential design, progressing from simpler creative demands to more complex challenges. The Written Protocol is recommended as a tool for making problem-solving processes explicit.

Second, teaching the full hierarchy of creative shifts appears beneficial. While paraphrase was dominant, students rarely used adaptation, permutation, or substitution. Explicit instruction in these higher-order shifts, using texts that invite such interventions, may expand students' strategic repertoires.

Third, a balance between collaborative and individual work is recommended. Collaborative tasks appeared to raise both creativity and quality while homogenizing performance, whereas individual assessments revealed true variation. A mixed approach - collaborative training followed by individual assessment - may allow weaker students to benefit from peer scaffolding while still measuring individual competence.

8. Conclusion

This study found that a PBL-TBL instructional approach was associated with improvements in translation creativity and translation quality among undergraduate translator trainees at an Iranian university. Creativity scores increased substantially following the intervention, and the majority of participants achieved "Successful" quality ratings. The predominance of paraphrase suggests that while students became adept at flexible rewording, future implementations may benefit from additional attention to higher-order creative shifts. The study contributes to translation pedagogy by offering an empirically tested curriculum for developing creativity, as well as a practical measurement model. However, given the limitations (e.g., particularly the absence of a control group and the small, single-institution sample) the findings should be interpreted with caution. Replication with larger and more diverse samples is needed before broader conclusions can be drawn. This research responds to calls to place creativity at the center of translator training, offering a potential pathway for developing creativity within educational contexts.

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Appendices

Course Plan:

Session 1	Task1: Translating Neologisms
Session 2	Task2: Proposing Domesticated Equivalents for the Characters' Names in Harry Potter Series
Session 3	Task3: Translating Joyce's Personification
Session 4	Task 4: Translating Character Voice & Stigmatized Terminology
Session 5	Task 5: Translating Idiolect & Emotional Rant
Session 6	Task 6: The Translator's Dilemma – Four Sisters, Four Voices
Session 7	Task 7: Translating the Arrogant Persona & Cultural Melodrama
Session 8	Task 8: Translating the Unspoken
Session 9	Task 9: Translating Emotional and Cultural Subtleties in a Military-Family Context
Session 10	Task 10: Translating Figurative (Metonymic) Literary Language
Session 11	Task 11: Translating Cultural Irony in Literary Text
Session 12	Task 12: Evaluating and Enhancing Persian Translations of a Literary Excerpt
Session 13	Task 13: Translating Dialect, Tone, and Register in Of Mice and Men
Session 14	Task 14: Analyzing and Enhancing Creative Additions in Literary Translation
Session 15	Task 16: Translating Atmosphere and Imagery in Two Gallants

Written Protocol (WP)

Problem	Proposed Translation	Advantages	Disadvantages
Final Version			
Justification of final Version			