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WAYS TO ENHANCE THE CREATIVITY COMPETENCE OF PROSPECTIVE TEACHERS

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Abstract. The development of prospective teachers' creativity competence is increasingly important for designing inclusive, responsive, and intellectually demanding learning experiences. However, creativity in teacher education is often reduced to novel teaching techniques rather than treated as a professionally grounded capacity to generate, select, implement, and evaluate pedagogical alternatives. This conceptual article examines how creativity competence can be enhanced through a theory-informed combination of pedagogical knowledge, divergent and convergent thinking, learner-centered motivation, reflective practice, and context-sensitive use of digital tools. The study employs a narrative, conceptually guided synthesis of established scholarship on creativity, teacher knowledge, self-regulation, feedback, and learning environments. On this basis, it proposes a six-stage CREATE cycle and an aligned formative assessment matrix for teacher-education courses. The framework emphasizes that instructional ideas must be both original and pedagogically appropriate, and that adaptation to learner needs is as consequential as idea generation. An illustrative microteaching scenario shows how the cycle may be implemented without presenting simulated outcomes as empirical evidence. The article concludes by identifying conditions for institutional adoption and testable directions for future research, including rubric validation and comparative evaluations of teacher candidates' lesson-design performance.

Keywords: creativity competence; prospective teachers; teacher education; divergent thinking; reflective practice; microteaching; pedagogical design; formative assessment.

1. Introduction

Contemporary teachers work in classrooms characterized by diverse prior knowledge, changing forms of participation, evolving technologies, and demands for both disciplinary accuracy and meaningful engagement. Under these conditions, professional expertise involves more than the faithful application of prescribed methods. Teachers must notice instructional problems, consider alternative explanations, design learning tasks, and revise their decisions in response to evidence. Creativity is therefore best understood as a dimension of sound pedagogical judgment, rather than as an occasional display of novelty.

The established scholarly definition of creativity combines originality with effectiveness or appropriateness (Runco & Jaeger, 2012). For teaching, these criteria are inseparable: an unusual activity that fails to support learning cannot be regarded as successful instructional creativity. Likewise, an effective lesson that is routinely reproduced without adaptation may not display creative problem-solving. Prospective teachers need opportunities to practice both generative thinking—producing alternative explanations, representations, and tasks—and evaluative thinking—deciding which alternatives suit specified learners and objectives.

This issue is especially relevant to initial teacher education. Candidates often enter practicum settings with developing subject knowledge and pedagogical repertoires. They can be encouraged

either to reproduce model lessons mechanically or to test defensible innovations in a supportive environment. Shulman's (1986) account of pedagogical content knowledge suggests that creative teaching is necessarily rooted in understanding how disciplinary ideas can be represented to particular students. Mishra and Koehler (2006) similarly show that technology becomes educationally useful through its relationship with pedagogy and content, not through novelty alone.

The aim of this article is to develop a theoretically grounded framework for strengthening prospective teachers' creativity competence and to propose observable indicators for formative assessment. Three questions guide the analysis: (1) Which constituent capabilities make teacher creativity professionally meaningful? (2) Which educational conditions support their development? (3) How can teacher educators structure and assess creative pedagogical work without mistaking originality for effectiveness? The contribution is a proposed design-and-assessment framework for teacher-education settings; it is not an empirical claim of tested effectiveness.

2. Theoretical Foundations and Conceptual Boundaries

2.1. Creativity as an educationally situated competence

Classic approaches recognize creativity as a multidimensional phenomenon. Guilford (1950) foregrounded divergent thought processes, while Rhodes (1961) distinguished the person, process, press (environment), and product. These perspectives imply that teacher creativity cannot be adequately assessed with a single measure of ideational fluency. It also depends on the quality of instructional products, the teaching context, and the processes through which alternatives are evaluated and refined.

Amabile (1996) links creativity to domain-relevant skills, creativity-relevant processes, and task motivation. In teaching, domain-relevant skills include curriculum knowledge, assessment literacy, and understanding of learner development. Creativity-relevant processes include flexible framing, analogy, recombination, and willingness to revise a plan. Motivation matters because candidates need time and psychological permission to explore approaches whose outcome is not predetermined. Yet autonomy is not equivalent to the absence of standards: clarity of learning goals enables productive experimentation.

The Four C model differentiates mini-c, little-c, Pro-c, and Big-C expressions of creativity (Kaufman & Beghetto, 2009). This distinction is useful for prospective teachers, for whom meaningful progress may involve personally novel explanations or student-centered lesson adaptations rather than groundbreaking pedagogical inventions. A candidate who produces two viable ways to explain fractions to a particular learner group can demonstrate emerging professional creativity even if similar strategies are already documented in the literature.

2.2. Creativity, pedagogical knowledge, and judgment

Pedagogical creativity requires movement between divergent and convergent processes. Divergence helps generate alternatives; convergence helps choose among them using educational criteria. Appropriate criteria include subject accuracy, inclusivity, cognitive demand, feasibility, assessment alignment, and potential unintended consequences. This dual-process perspective protects teacher education from an "entertainment bias," in which visually attractive activities are treated as creative despite weak conceptual learning.

Teacher knowledge provides the constraints that make originality productive. Shulman (1986) underscores the importance of representing content in comprehensible ways; Mishra and Koehler (2006) frame instructional technology as a coordinated design problem. Henriksen, Mishra, and Fisser (2016) describe creativity and technology use as part of a broader educational system. Thus, a teacher candidate who proposes a digital storytelling lesson must justify why that medium

clarifies ideas, improves participation, and permits evidence of learning, instead of simply adding a device or application.

2.3. Motivation, feedback, and developmental support

Self-determination theory indicates that autonomy, competence, and relatedness contribute to high-quality motivation (Deci & Ryan, 2000). Teacher educators can support these needs by offering bounded choices, calibrated challenges, and respectful dialogue. Such environments make it more plausible that students will articulate tentative instructional ideas, seek criticism, and continue refining weak prototypes. Creativity, however, does not require unconditional praise: feedback is most useful when it identifies how a design relates to its objectives and what specific adjustments may improve it (Hattie & Timperley, 2007).

Self-regulated learning adds a developmental mechanism. Planning, monitoring, and reflection allow candidates to compare an intended learning outcome with the evidence produced during microteaching (Zimmerman, 2002). From this perspective, creative capacity grows not simply by increasing the number of teaching ideas, but by improving the candidate's ability to diagnose a problem, select an alternative, observe its effects, and generalize lessons to a new context.

3. Methodological Approach

This article is a conceptual, theory-informed narrative synthesis rather than a systematic review or field experiment. Its evidence base consists of established contributions in creativity theory, teacher knowledge, motivation, feedback, formative assessment, and educational innovation. The works are used as conceptual anchors because they articulate constructs and design principles directly relevant to teacher preparation. The bibliography is not presented as an exhaustive sample of all available research, and no systematic database screening, risk-of-bias scoring, or meta-analysis was conducted.

The analytical procedure comprised four interpretive stages. First, the construct of creativity was bounded by the combined criteria of novelty and pedagogical appropriateness. Second, recurring enabling mechanisms were identified across theoretical perspectives: subject knowledge, flexible thinking, autonomy-supportive conditions, collaborative critique, self-regulation, and purposeful technology integration. Third, these mechanisms were translated into observable learning activities within a proposed six-stage cycle. Fourth, an assessment matrix was derived to make classroom evaluation transparent and compatible with formative feedback. The proposed model is an author-developed synthesis; its psychometric quality and effectiveness require future empirical testing.

The analysis focuses on pre-service and early-stage teacher education and may be adapted to different disciplines, including language education, science, and primary education. It makes no claim that a single method will be equally effective across cultures, institutions, or age groups. The model should be contextualized through local curriculum expectations, class size, resources, and student needs.

4. A Multidimensional Model of Creativity Competence

For the purposes of teacher education, creativity competence is defined here as the developing capacity to frame instructional challenges, generate pedagogically diverse possibilities, justify and test feasible solutions, and revise practice on the basis of learner evidence. Five mutually reinforcing dimensions operationalize this definition (Table 1).

Table 1. Proposed dimensions of prospective teachers' creativity competence

Dimension	Observable indicator	Professional purpose

Dimension	Observable indicator	Professional purpose
Problem framing	Identifies a specific learning barrier and reconsiders assumptions about it	Prevents solution-seeking before diagnosis
Idea generation	Produces multiple, substantively different teaching alternatives	Expands the pool of pedagogical options
Pedagogical selection	Explains why an option fits content, learners, and constraints	Balances originality with appropriateness
Adaptive enactment	Modifies instructions or representations during teaching	Responds to participation and understanding
Evidence-informed reflection	Uses feedback and learner work to revise and transfer a design	Turns isolated novelty into developmental competence

These dimensions should not be interpreted as independent personality traits. A candidate may display high fluency but weak selection, or detailed reflection but little willingness to revise a conventional task. The framework therefore emphasizes developmental profiles and the quality of decisions over a single global creativity score.

5. The CREATE Cycle for Teacher-Education Practice

The proposed CREATE cycle is a structured sequence that links creativity to lesson planning, microteaching, and reflective improvement. Its stages—Context diagnosis, Reframing, Exploration, Adaptive enactment, Testing with evidence, and Evidence-based redesign—are designed for iterative use. Candidates may return to earlier stages whenever feedback reveals a mistaken assumption. Table 2 outlines the sequence.

Table 2. Six-stage CREATE cycle: activities and assessable outputs

Stage	Candidate task	Evidence generated
C — Context diagnosis	Specify objectives, misconceptions, learner differences, available resources, and restrictions.	One-page instructional problem statement
R — Reframing	Write alternative interpretations of why the learning difficulty occurs.	At least two plausible problem framings
E — Exploration	Generate several alternatives using analogy, multimodal representation, or peer brainstorming.	Idea map and initial lesson prototypes
A — Adaptive enactment	Deliver a short microteaching segment and respond to learner cues.	Observation notes and teaching artifacts
T — Testing with evidence	Examine exit tickets, questions, peer critique, and signs of misunderstanding.	Brief comparison of goal and observed evidence

Stage	Candidate task	Evidence generated
E — Evidence-based redesign	Revise the lesson and explain what could transfer to a different learner group.	Revised plan with a rationale for changes

5.1. Designing the learning environment

The cycle requires scaffolding. At the outset, teacher educators should supply clear task boundaries, assessment criteria, and discipline-specific examples. Thereafter, candidates can receive increasing control over problem selection and solution design. Choice can be structured, for example, by allowing learners to select among three instructional goals while requiring all designs to include formative assessment and accommodations for participation.

Collaborative critique should focus on ideas rather than personal judgments. Useful prompts include: “Which learner difficulty does this task address?”, “What evidence would show that the new explanation works?”, and “Who might be excluded by this activity?” Such prompts encourage the testing of ideas against instructional evidence. Craft (2005) notes that creative education involves tensions and dilemmas; teacher preparation should make these tensions explicit, especially where learner agency, coverage requirements, time, and assessment expectations compete.

5.2. Role of digital technology

Digital tools can widen the repertoire of representations, simulations, collaborative writing, and formative responses, but they are not themselves indicators of competence. A practical decision rule is to specify the intended learning mechanism before selecting a tool. For example, a simulation is justified if it allows students to vary parameters and confront misconceptions that are difficult to observe with static images; a collaborative document is justified if it reveals how students build, compare, and revise explanations. The pedagogical-content-technology relationship should remain explicit (Mishra & Koehler, 2006).

Inclusive implementation also requires an offline alternative where connectivity, accessibility, or equipment is limited. The originality of a technology-supported idea must not obscure data privacy, learner workload, or uneven access. Thus, “creative use of technology” means a defensible improvement in learning affordances, not the maximum possible use of digital applications.

6. Illustrative Application: Redesigning a Microteaching Lesson

Consider a teacher-education seminar in which prospective teachers are asked to introduce the concept of formative assessment to a mixed-ability secondary-school class. In an initial plan, the candidate explains definitions and asks students to repeat them. The instructor identifies a likely instructional problem: learners may know the term “feedback” without understanding how evidence of learning can change subsequent teaching decisions.

During Context diagnosis, the candidate identifies a measurable objective: students should be able to select a formative assessment technique for a specified lesson and justify how its evidence would inform instruction. In Reframing, the candidate asks whether the real obstacle is unfamiliar terminology or an inability to connect evidence with decisions. During Exploration, the candidate compares three options: a teacher-led explanation, a case-card sorting task, and a short peer-design challenge involving ambiguous student responses.

The candidate chooses case cards followed by a peer-design challenge because they require explanation and comparison rather than recall alone. During Adaptive enactment, the candidate notices that some students confuse marks with diagnostic feedback and adds a concrete example of an exit ticket that reveals a misconception. During Testing, students write one teaching decision justified by an exit-ticket response. Finally, the candidate redesigns instructions to reduce

ambiguity, includes an accessible paper-based alternative, and documents the reason for each change.

This vignette is an instructional illustration, not a record of a conducted experiment. No learner sample, measured improvement, or effect size is claimed. Its analytical purpose is to show how originality, appropriateness, inclusion, and evidence use can be examined together in a realistic task.

7. Formative Assessment and Implementation Conditions

Assessment should capture development over time rather than reward only polished final products. The framework recommends combining a design portfolio (problem statement, alternatives, selected plan, learner evidence, and revisions), a microteaching observation, and a short structured reflection. Table 3 offers a candidate-facing rubric architecture. The rubric is provisional and should not be treated as a standardized or validated scale.

Table 3. Proposed assessment matrix for a creativity-focused teaching portfolio

Criterion	Evidence of developing performance	Review question
Originality with relevance	A non-routine but justified task or representation	What makes the idea meaningfully different and useful?
Diversity of alternatives	Multiple responses that differ in strategy, not merely surface features	Did the candidate consider more than one pedagogical route?
Disciplinary and pedagogical accuracy	The design preserves conceptual correctness and task alignment	Would the activity help meet the stated learning objective?
Responsiveness and inclusion	Adjustments attend to misunderstanding, access, and participation	How was the solution adapted to learners?
Evidence-based revision	Revisions identify the observed problem and reason for change	What feedback informed the next version?

For practical use, each criterion may be described at four developmental levels: emerging (limited or unsubstantiated evidence), developing (partly justified evidence), proficient (coherent evidence aligned with objectives), and advanced (well-justified, adaptive, and transferable evidence). These are illustrative anchors, not numerically validated thresholds. Two independent assessors could initially score a sample of portfolios and discuss disagreements to clarify wording. Subsequent research should examine inter-rater consistency, content validity, and the extent to which rubric performance predicts observed classroom practice.

Institutional adoption depends on several conditions. First, methods courses and subject courses must coordinate expectations so that creativity is not isolated in a single workshop. Second, instructors need preparation in coaching, constructive critique, and evidence-oriented observation. Third, sufficient time must be allocated for revision; one-off brainstorming rarely shows whether a candidate can improve an idea. Fourth, the learning climate should permit reasoned experimentation without lowering expectations for subject accuracy or student safeguarding.

Finally, assessment systems should value iterative design work rather than only the appearance of an attractive lesson.

8. Discussion: Contributions, Trade-offs, and Research Directions

The CREATE cycle connects multiple established ideas but claims no new universal law of creativity. Its main contribution is a clear translation from conceptual dimensions to repeated teacher-education activities and observable assessment evidence. This reduces the distance between broad calls for "creative teaching" and what instructors can actually ask candidates to produce. The framework also keeps a distinction between the creativity of the teacher and the creativity of the students: the former is not automatically proven by students enjoying a lesson, and the latter should be examined through learner work and opportunities for independent thinking.

Several trade-offs remain. Strict lesson templates can support novices yet discourage alternative approaches when applied inflexibly; unrestricted choice can, conversely, overload candidates with insufficient pedagogical knowledge. Similarly, elaborate digital products may consume time better used to identify misconceptions or provide feedback. The framework proposes a middle path: non-negotiable learning and ethical criteria with flexible opportunities to design, test, and revise.

Future studies could compare CREATE-supported courses with existing lesson-design instruction using baseline and follow-up measures, blinded assessment of teaching portfolios, and classroom observations. Study protocols should specify assignment procedures, sample characteristics, implementation fidelity, comparison conditions, and relevant covariates. Qualitative interviews could examine whether candidates perceive critique as autonomy-supportive and how they transfer new practices to field placements. Longitudinal evidence would be needed to establish whether observed improvements persist beyond the seminar. OECD (2024) highlights the relevance of creative thinking to educational outcomes, but such system-level findings do not by themselves validate this specific teacher-education model.

9. Limitations

This paper has three important limitations. First, the literature synthesis is selective and theoretical, not a reproducible systematic review; conclusions should therefore be treated as design propositions rather than comprehensive evidence estimates. Second, the CREATE cycle and assessment matrix have not been piloted or psychometrically validated; their feasibility and reliability are unknown. Third, the analysis does not establish effects on teacher candidates, school pupils, or institutions. Cultural norms, subject demands, resource constraints, and institutional policies may require adaptations that influence implementation and results.

10. Conclusion

Enhancing prospective teachers' creativity competence requires moving beyond the demand for "interesting lessons" toward a disciplined ability to frame problems, develop alternatives, choose pedagogically appropriate approaches, adapt instruction, and learn from evidence. Established creativity, motivation, teacher-knowledge, and self-regulation theories provide complementary foundations for such development. The proposed CREATE cycle offers a practical structure for integrating these foundations into lesson design, microteaching, and reflection, while the assessment matrix identifies candidate behaviors that can be discussed and improved. This framework should be understood as a testable proposal. Its value for international teacher education will ultimately depend on careful contextual adaptation and transparent empirical evaluation.

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