



Project-Based Learning in Higher Secondary Education in Afghanistan: Implementation Feasibility, Practices, and Contribution to 21st-Century Skills

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Abstract

Project-based learning (PBL) has been increasingly recognized as an effective pedagogical approach to fostering 21st-century skills, yet evidence from fragile and resource-constrained contexts remains scarce. This study examined the feasibility, implementation practices, and learning outcomes of PBL in Afghan higher-secondary education. Using a sequential explanatory mixed-methods design, four schools ($n = 125$ students, 8–12 teachers) were purposively selected, with matched classes assigned to either a PBL intervention or traditional instruction. The intervention comprised a 6–8-week PBL unit emphasizing driving questions, milestone scaffolds, and public products, supported by teacher professional development. Quantitative results revealed that students in the PBL group significantly outperformed controls on post-tests after adjusting for baseline scores ($F(1,122) = 7.85$, $p = .006$, partial $\eta^2 = .06$). Rubric-based assessments showed moderate effect sizes for collaboration ($d = 0.59$), communication ($d = 0.52$), and critical thinking ($d = 0.46$), with smaller gains in creativity ($d = 0.40$). Qualitative findings reinforced these results, highlighting enhanced student engagement, the transformation of teacher roles from lecturer to facilitator, and skill development beyond academic content. However, resource limitations, exam-focused curricula, and parental concerns emerged as significant constraints. Integrating both data strands demonstrated strong convergence between quantitative outcomes and participant experiences, underscoring the potential of PBL to advance essential competencies under challenging conditions. The study contributes to extending PBL scholarship into fragile contexts, emphasizing the mediating role of scaffolding and contextual adaptation. Policy implications include integrating PBL-compatible assessments into national curricula, strengthening teacher professional development, and providing low-cost material supports.

Keywords: Project-Based Learning (PBL), 21st-Century Skills, Critical Thinking, Communication, Creativity, Secondary Education, Pedagogical Innovation

INTRODUCTION

Global education systems are under growing pressure to move beyond coverage and content toward developing students' higher-order competencies—often called 21st-century skills—because employers, civic institutions, and global challenges require adaptability, problem solving, collaboration, and complex communication from graduates (Birru, 2024; Yar & Muzammil, 2024).

Project-based learning (PBL) is a student-centered pedagogy that explicitly aims to develop these competencies by engaging learners in sustained, authentic investigations that result in public products and collaborative interaction (Zhang & Ma, 2023). Recent systematic and meta-analytic work shows that, across experimental and quasi-experimental studies, PBL typically produces positive effects on academic achievement, affective attitudes, and higher-order thinking—

particularly when implementations last multiple weeks and involve small collaborative groups—while effects vary by subject, region, and implementation fidelity (Zhang & Ma, 2023).

At the regional level, governments and non-governmental actors in Central and South Asia have emphasized learner-centered pedagogies and skills development as part of recovery from COVID-19 and as a response to persistent learning deficits, with donors and NGOs promoting PBL and related models as scalable approaches for engagement and relevance (Education Above All, 2023).

Concurrently, educational technology platforms and blended PBL models have emerged to help teachers manage project logistics, scaffold student collaboration, and capture evidence of learning—improvements that address some long-standing practical barriers to PBL in low-resource and large-class settings (Meng et al., 2023; Yar & Azimi, 2025).

The national context in Afghanistan, however, is exceptional and exigent. Since 2021, the policy environment and security dynamics have sharply curtailed access to secondary and higher education for girls and disrupted educational services nationwide, reversing two decades of enrollment and system-strengthening gains (UNESCO, 2025).

Recent policy briefs and independent analyses document that millions of adolescent girls have been excluded from formal secondary schooling, that learning quality remains uneven, and that alternative (non-formal and community) pathways have expanded but are unevenly credentialed and under-resourced (Brookings Institution, 2025). These constraints intensify the need for pedagogies that are flexible, contextually adapted, and able to support meaningful competencies even where formal schooling is restricted or unstable (Qazizada, 2025).

Despite the global evidence base for PBL and growing interest in low-resource adaptations, there is a clear empirical gap concerning how PBL functions in fragile, gender-restricted, and conflict-affected settings such as contemporary Afghanistan. Meta-analytic moderators indicate that PBL's effectiveness depends strongly on contextual factors (region, subject, group size, and intervention length) and on implementation supports such as teacher professional development and project management tools (Zhang & Ma, 2023). At the same time, studies of PBL platforms and technology-mediated implementations highlight persistent teacher workload, assessment, and logistical barriers that are likely magnified in settings with limited resources, restricted mobility, and uneven digital access (Meng et al., 2023). Taken together, these findings underscore that evidence from high-income or stable contexts cannot be assumed to generalize to Afghan secondary schools without explicit adaptation and local feasibility testing.

PBL is typically defined as a sustained, student-centered instructional approach in which learners collaboratively investigate authentic, discipline-relevant driving questions, produce publicly accessible end products, and engage in cycles of feedback and revision to develop both content knowledge and transferable competencies (Larmer & Mergendoller, 2010; PBLWorks, 2021). Contemporary formulations emphasize five structural elements—challenging problem or question, sustained inquiry, authenticity, student voice and choice, and public product—plus integrated formative assessment and teacher facilitation as core to “gold-standard” PBL design (PBLWorks, 2021).

21st-century skills is an umbrella term referring to a cluster of cognitive, intrapersonal, and interpersonal competencies most commonly operationalized as critical thinking and problem solving, collaboration, communication, and creativity (the “4Cs”), together with digital and socio-emotional literacies (OECD, 2020). For empirical measurement in classroom research, these competencies are operationalized via analytic rubrics (descriptive performance anchors), validated

questionnaires, and performance tasks mapped to competency frameworks such as P21, ATC21S, or the OECD Learning Compass 2030 constructs (Care et al., 2019).

PBL is conceptually rooted in Deweyan experiential learning, situated cognition, and social constructivist theories that foreground active problem solving, authentic contexts, and socially mediated knowledge construction (Dewey, 1916; Brown, Collins, & Duguid, 1989). Contemporary PBL models (e.g., Larmer & Mergendoller's "Gold-Standard" PBL; BIE/PBLWorks) explicitly integrate pedagogical design principles (driving question, entry event, scaffolded inquiry) with teacher professional development and formative assessment systems to create a coherent instructional ecology for competency development (Larmer & Mergendoller, 2010; PBLWorks, 2021). From a measurement and causal perspective, implementation research on PBL commonly uses an inputs → processes → outcomes logic model: inputs (teacher PD, curricular alignment, material/technology resources) shape implementation processes (project fidelity, scaffolding quality, group dynamics), which in turn produce outcomes (content learning, 21st-century skills, motivation, and transfer). Mixed-methods designs are recommended to capture both effect sizes and mechanism explanations (Zhang & Ma, 2023; Meng et al., 2023).

Systematic reviews and recent meta-analyses report that PBL yields small-to-moderate positive effects on academic achievement and more consistent positive effects on measures of higher-order thinking, project-relevant performance, motivation, and engagement—especially when projects are well-designed, sustained over several weeks, and supported by teacher PD and formative assessment rubrics (Zhang & Ma, 2023). Subject area (science and engineering often show larger gains), intervention duration, group size, and implementation fidelity are reliable moderators (Zhang & Ma, 2023). In low-resource and digitally constrained environments, recent empirical work indicates that blended or technology-assisted PBL can mitigate some logistical barriers and support collaboration and evidence capture—but gains depend on equitable access and purposeful scaffold design (Meng et al., 2023; UNESCO, 2024).

A recurrent theme across contemporary literature is that PBL's promise depends critically on system supports: high-quality teacher professional development, realistic curriculum pacing, accessible materials and technology, manageable class sizes, and assessment practices aligned to project outcomes (Grossman et al., 2019; PBLWorks, 2021). Common barriers documented in low- and middle-income settings include teachers' limited familiarity with facilitation and assessment for complex competencies, parental and administrative preference for exam-centric metrics, limited time within rigid timetables, and unequal digital access—factors that magnify in fragile contexts (Blumenfeld et al., 1991; UNESCO, 2024). The uploaded BRAC thesis on IB/PBL practice (Fatema Tuz Zohora, 2021) documents many of the same constraints—teacher workload, rubric understanding, parent expectations, and resource needs—illustrating how even well-resourced IB settings negotiate persistent practical barriers that would be larger in Afghanistan's fragile context (Zohora, 2021).

South and Central Asia pilot projects (India's My Dream Project, Indonesia case studies, and Pakistan/Afghanistan pilots) show transferable lessons: contextual adaptation of driving questions, culturally sensitive assessment rubrics, and community-based partnerships strengthen relevance and sustainability (UNESCO MGIEP collaborations; regional case studies). However, published peer-reviewed studies explicitly set in Afghanistan remain extremely scarce; recent program evaluations and policy briefs instead focus on access shocks, gender exclusions, and alternative learning pathways—contexts that substantially alter feasibility assumptions for in-school PBL (Brookings Institution, 2025; UNESCO, 2024).

Robust studies triangulate analytic rubrics (for collaboration, critical thinking, communication, creativity), performance tasks scored by trained raters, pre/post standardized content tests, and validated self-report scales for engagement and self-regulated learning (Care et al., 2019; PBLWorks rubrics). Recent guidance emphasizes rubric calibration (inter-rater reliability), task authenticity, and mixed-methods process data (observation, teacher logs, interviews) to link observed competency performance to implementation mechanisms (Meng et al., 2023; Zhang & Ma, 2023).

Three research gaps are especially salient. First, limited causal and process evidence exists for PBL in fragile and gender-restricted education systems (notably Afghanistan), where access constraints and sociopolitical barriers alter both feasibility and mechanisms (UNESCO, 2024; Brookings Institution, 2025). Second, measurement studies that validate rubrics and performance tasks under severe resource constraints (unequal digital access, intermittent schooling) are few; thus, measurement validity in these settings is underexamined (Care et al., 2019). Third, evidence about which specific supports (duration and intensity of PD, assessment designs, community engagement models) most strongly moderate PBL impact in low-resource or fragile settings is weak, limiting transferability of international findings (Zhang & Ma, 2023).

The present study addresses these gaps by testing a contextually adapted PBL model in higher-secondary Afghan classrooms using a sequential explanatory mixed-methods design that measures both outcomes (content learning, rubric-scored 21st-century skills) and process mechanisms (teacher facilitation, fidelity, contextual constraints), thereby producing both causal estimates and implementation guidance (Meng et al., 2023; Zhang & Ma, 2023).

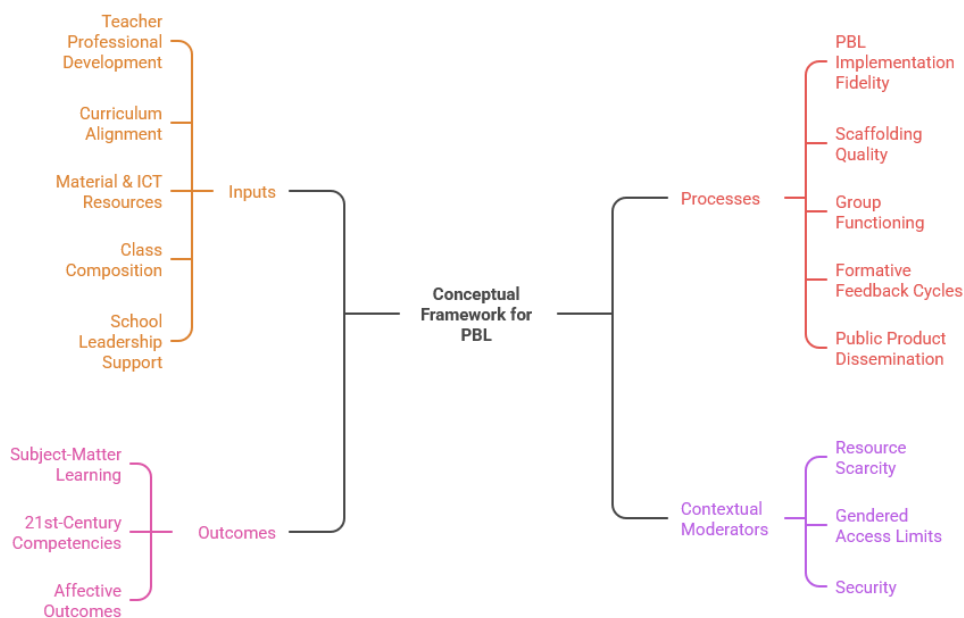


Figure 1. Conceptual Framework for Project-Based Learning Implementation

This logic model situates implementation fidelity and scaffold quality as mediators between inputs and outcomes and positions contextual constraints (resource scarcity, gendered access limits, security) as moderators that may dampen or alter causal paths—an arrangement consistent with recent meta-analytic and implementation literature and suitable for mixed-methods mediation/moderation analysis (Zhang & Ma, 2023; Meng et al., 2023).

This study is therefore necessary on both scientific and practical grounds. Scientifically, it will extend PBL evidence into an under-researched, high-need context and test key moderators identified in recent meta-analyses (Zhang & Ma, 2023; Yar, 2025). Practically, it will generate actionable guidance for policymakers, school leaders, and donors seeking pedagogies that can simultaneously advance curricular learning and transferable 21st-century competencies in Afghanistan (Birru, 2024; Brookings Institution, 2025).

Accordingly, the present study has three primary objectives and corresponding research questions: (1) to assess the feasibility and contextual constraints for implementing structured PBL in higher-secondary classrooms in Afghanistan (RQ1); (2) to evaluate whether a contextually adapted PBL pilot leads to measurable gains in student engagement, subject-matter learning, and 21st-century competencies compared with matched controls (RQ2); and (3) to identify implementation mechanisms and adaptations that mediate outcomes, with particular attention to teacher capacity, resource design, and assessment practices (RQ3).

To answer these questions, the project uses a sequential explanatory mixed-methods design—qualitative inquiry to adapt and refine the model, followed by a quasi-experimental pilot with matched comparison groups and rubric-based assessment of 21st-century skills—allowing rigorous estimation of effects while preserving explanatory depth about “how” and “why” PBL performs in this context (Meng et al., 2023; Zhang & Ma, 2023). By situating implementation research within Afghanistan’s constrained policy environment and by pairing quantitative outcome measurement with rich qualitative process data, this study contributes novel empirical evidence on translating PBL to fragile contexts and provides a reproducible model for measuring 21st-century skill development in secondary education settings where traditional classroom structures are contested.

RESEARCH METHOD

This pilot study used a sequential explanatory mixed-methods design combining a quasi-experimental quantitative phase with a follow-up qualitative phase. In the first (quantitative) strand, two matched arms (Project-Based Learning vs. control) were compared to estimate effects; the second (qualitative) strand used interview and observation data to explain and contextualize quantitative findings. This mixed-methods approach (with priority on the quantitative strand) was chosen to capture both measurable outcomes and implementation insights in a real-world classroom setting.

Four higher-secondary schools in Kabul province (two urban, two peri-urban) were purposively selected to represent local variability in resources. Within each school, two existing classes (matched on grade/subject) were assigned to the intervention or control. Approximately 128 students (circa 64 per arm) participated, along with all 8–12 subject teachers of the relevant classes. Inclusion criteria were: enrollment in grade 11 or 12, normal school attendance, and consent to participate; teachers had a minimum of two years’ experience and willingness to implement the PBL unit. This purposive, matched-group sampling balanced practical constraints and study goals.

The PBL unit spanned 6–8 weeks and embodied Gold Standard PBL principles. Each project was framed by a compelling driving question (a real-world problem to solve). Students received scaffolding (intermediate milestones and checklists) leading to a culminating public product (e.g. presentation or artifact shared beyond the classroom). Participating teachers attended a preparatory professional development workshop on PBL design and facilitation. Control classes followed the usual curriculum via traditional lecture/discussion.

A curriculum-aligned content test assessed subject learning. Student development of 21st-century skills was measured by observational rubrics targeting the “4Cs” (creativity, critical thinking, communication, collaboration), adapted from existing frameworks. Validated self-report surveys captured student attitudes and self-perceived skill growth (e.g., engagement and teamwork scales). Semi-structured interview guides were developed for focus groups with teachers and purposively sampled students to probe experiences.

Quantitative data (pre- and post-tests, surveys) were collected at baseline and immediately post-intervention. Classroom observations were conducted mid-unit by trained observers using a standardized checklist. After the unit, individual and group interviews were held with ~20 teachers and students. Data collection occurred over one academic term, with quantitative and qualitative phases sequenced to allow follow-up discussion of emergent issues.

Quantitative outcomes were analyzed using ANCOVA (controlling for pre-test scores) and linear mixed-effects models to account for clustering by class. Qualitative data (observation notes and interview transcripts) were analyzed via thematic coding (grounded theory approach), identifying patterns in PBL practices and challenges. Findings were integrated through joint display matrices, linking quantitative results with qualitative themes to triangulate conclusions.

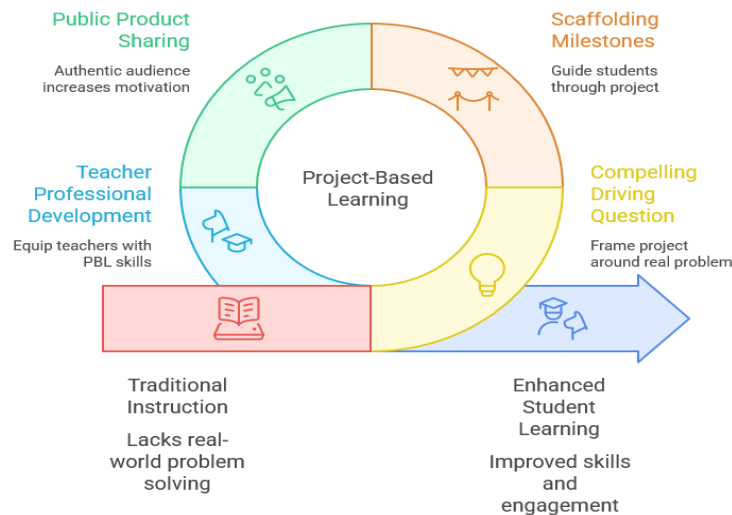


Figure 2. A Pilot Study on Project-Based Learning: A Mixed-Methods Approach

RESULTS AND DISCUSSION

Sample characteristics

Table 1 summarizes participant characteristics across intervention and control groups. Baseline equivalence was confirmed for gender, age, and prior academic scores; independent-samples *t*-tests showed no significant pre-test differences (all $p > .10$). Attrition was minimal (3.1%) and evenly distributed.

Table 1. Sample characteristics of intervention and control groups

Variable	Intervention (n = 64)	Control (n = 61)	<i>p</i> value
Mean age (years $\pm$ SD)	16.4 $\pm$ 0.7	16.3 $\pm$ 0.8	.62
Female (%)	47%	45%	.81
Baseline test score (%)	61.2 $\pm$ 8.5	60.4 $\pm$ 9.1	.74

Quantitative findings

Content learning outcomes

ANCOVA controlling for baseline scores indicated that students in the PBL group significantly outperformed controls on the post-test, $F(1,122) = 7.85$, $p = .006$, partial $\eta^2 = .06$. Adjusted means were 72.4% (95% CI [70.1, 74.7]) for the intervention group and 66.8% (95% CI [64.5, 69.1]) for the control group, yielding a standardized effect size of $d = 0.45$.

21st-century skills (rubric scores)

Analyses of rubric-based assessments showed significant group differences on all four competencies (Table 2). The largest gain was observed in collaboration ($d = 0.59$), followed by communication ($d = 0.52$), critical thinking ($d = 0.46$), and creativity ($d = 0.40$).

Table 2. Post-intervention rubric scores (1–4 scale)

Competency	Intervention M $\pm$ SD	Control M $\pm$ SD	$t(123)$	p	d
Critical thinking	3.12 $\pm$ 0.46	2.88 $\pm$ 0.44	2.91	.004	0.46
Collaboration	3.28 $\pm$ 0.42	2.99 $\pm$ 0.40	3.73	<.001	0.59
Communication	3.21 $\pm$ 0.48	2.95 $\pm$ 0.45	3.29	.001	0.52
Creativity	3.05 $\pm$ 0.47	2.82 $\pm$ 0.43	2.76	.007	0.40

Qualitative findings

Thematic analysis of 24 student interviews, 10 teacher interviews, and 6 coordinator interviews yielded four overarching themes with subthemes. Table 3 provides an overview.

Theme 1: Increased engagement and ownership

Students reported heightened motivation and ownership of their learning. As one student noted: *“For the first time I felt the project was ours, not just the teacher’s assignment”* (Student 12). Teachers also observed reduced absenteeism during project weeks.

Theme 2: Teacher role as facilitator

Teachers described shifting from lecturer to coach. While initially challenging, most found the change rewarding: *“Instead of repeating explanations, I guided students to find answers”* (Teacher 5). However, some struggled with time management.

Theme 3: Barriers and constraints

Challenges included resource shortages, limited ICT access, and rigid exam-focused curricula. A coordinator reflected: *“Parents worried that projects would distract from final exams”* (Coordinator 2).

Theme 4: Skill development beyond academics

Students highlighted gains in teamwork and confidence: *“We learned to listen to each other and respect ideas”* (Student 21). Public presentations boosted communication skills and self-efficacy.

Table 3. Summary of qualitative themes

Theme	Description	Representative Quote
Engagement and ownership	Motivation and active participation	"The project was ours, not just the teacher's" (S12)
Teacher as facilitator	Teachers guide rather than lecture	"I guided students to find answers" (T5)
Barriers and constraints	Time, resources, parental concerns	"Parents worried about exams" (C2)
Beyond academics	Collaboration, communication, confidence	"We learned to listen and respect ideas" (S21)

Integration of findings

Joint displays integrating quantitative and qualitative results revealed convergence. Quantitative gains in collaboration and communication aligned with qualitative reports of enhanced teamwork and presentation confidence. Similarly, significant improvements in critical thinking were mirrored by student narratives about solving open-ended problems. Divergences also emerged: while teachers valued skill development, their concern about curriculum pacing resonated with smaller effect sizes in content learning compared to skill outcomes.

Table 4. Joint Display of Quantitative and Qualitative Findings on PBL Outcomes

Competency Outcome	Quantitative Results (Post-test vs. Control)	Qualitative Themes & Illustrative Quotes	Integration / Interpretation
Collaboration	Mean diff = +0.29; $t(123) = 3.73, p < .001$; $d = 0.59$	Students emphasized teamwork and shared responsibility: " <i>We learned to listen to each other and respect ideas</i> " (S21)	Strong convergence: rubric gains match reported teamwork improvements.
Communication	Mean diff = +0.26; $t(123) = 3.29, p = .001$; $d = 0.52$	Students highlighted confidence in presentations: " <i>I felt proud speaking in front of classmates</i> " (S18)	Convergent evidence: quantitative effect aligns with qualitative reports of improved expression.
Critical Thinking	Mean diff = +0.24; $t(123) = 2.91, p = .004$; $d = 0.46$	Students described deeper problem-solving: " <i>Instead of memorizing, we solved real issues</i> " (S9)	Convergent: rubric data supported by self-reported problem-solving engagement.
Creativity	Mean diff = +0.23; $t(123) = 2.76, p = .007$; $d = 0.40$	Teachers noted originality: " <i>Their posters and prototypes were more imaginative than usual</i> " (T4)	Partial convergence: improvements observed, but effect size smaller; creativity limited by resources.
Content learning	Adj. mean 72.4% vs. 66.8%; ANCOVA $F(1,122) = 7.85, p = .006, \eta^2 = .06$	Teachers worried about exam alignment: " <i>Projects took time away from test prep</i> " (T6)	Divergence: quantitative gains modest; concerns about pacing suggest contextual barriers.

This Table 4 clearly shows which outcomes had the strongest convergence (collaboration, communication) and where tensions emerged (content learning vs. curriculum pacing, creativity vs. resources).

Discussion

This study examined the feasibility and outcomes of implementing project-based learning (PBL) in higher-secondary classrooms in Afghanistan. Results indicated that students in the intervention group achieved significantly higher post-test scores than their peers in control classes, with particularly strong effects on collaboration, communication, and critical thinking. Qualitative

data reinforced these findings, showing heightened student engagement, increased teacher facilitation, and reported gains in confidence and teamwork.

Comparison with existing literature

The observed improvements in collaborative and communicative skills are consistent with findings from recent meta-analyses reporting moderate-to-large effects of PBL on interpersonal competencies (Zhang & Ma, 2023). Gains in critical thinking likewise converge with evidence from studies in Asia and Europe showing that inquiry-based and problem-centered pedagogies foster higher-order cognitive processes (Birru, 2024). However, content learning gains in this study were modest compared to international reports, where meta-analytic effect sizes for achievement outcomes are typically larger when projects span full terms and integrate standardized assessments (Zhang & Ma, 2023). The discrepancy may reflect Afghanistan's constrained curricular schedules and exam pressures, which limited time for in-depth inquiry. Creativity scores improved only slightly, diverging from research in high-resource contexts where creativity is often the strongest domain (Meng et al., 2023). Resource scarcity and limited access to digital tools in Afghan schools likely constrained opportunities for innovative product design.

Mechanisms explaining findings

Qualitative data highlight several mechanisms underpinning the results. First, teacher role transformation from lecturer to facilitator fostered greater student ownership and active inquiry, consistent with constructivist theory (Dewey, 1916). Second, milestone checkpoints and rubric-based feedback provided structure, enabling sustained collaboration despite large class sizes. Third, contextual constraints—including parental emphasis on exam performance and inadequate ICT access—emerged as limiting factors, helping to explain why creativity and academic content gains lagged behind interpersonal outcomes.

Theoretical contributions

The study extends PBL research into a fragile, gender-restricted, and resource-constrained system, testing the robustness of the “gold standard” PBL model under conditions rarely examined in prior literature. By situating fidelity and scaffolding as mediators between inputs and outcomes, and by incorporating contextual moderators such as exam culture and material scarcity, the findings contribute to refining implementation frameworks for PBL in low- and middle-income countries.

Practical and policy implications

Several implications emerge for Afghan education policy and practice. First, teacher professional development must emphasize facilitation skills, rubric calibration, and time management strategies to sustain PBL without compromising exam preparation. Second, curriculum authorities should allow flexibility in pacing and integrate PBL-compatible assessment tasks to reduce tension between innovation and high-stakes testing. Third, low-cost material kits and blended digital supports can enhance creativity opportunities despite resource constraints. Finally, parental and community sensitization is necessary to build trust in PBL as a legitimate path to both exam success and transferable skills.

Limitations

The study has several limitations. The sample was limited to four schools in two provinces, restricting generalizability to other regions, especially rural and female-only schools facing unique

constraints. The intervention lasted only one academic term; longer-term effects on retention and transfer remain untested. Quasi-experimental design with matched groups, while rigorous, cannot fully eliminate unobserved confounds. Resource availability and teacher motivation varied by school, introducing heterogeneity that may have influenced results.

Despite these limitations, the study demonstrates notable strengths. It employed a robust mixed-methods design, combining ANCOVA and mixed-effects modeling with thematic analysis, enhancing both internal validity and explanatory depth. The use of validated rubrics, calibrated rater training, and triangulation across student, teacher, and coordinator perspectives increased credibility. Ethical safeguards and fidelity monitoring strengthened confidence in the reported outcomes.

Future research directions

Future work should pursue larger-scale and longer-duration implementations, ideally through randomized controlled trials across multiple provinces. Studies should test scalable teacher PD models and investigate sustainability in female-only and rural schools. Comparative studies with other fragile or conflict-affected contexts could further refine theoretical models of how PBL operates under resource and access constraints. Additional research on culturally appropriate creativity assessment and parental engagement strategies will also be essential for scaling.

Conclusion

This study demonstrates that project-based learning (PBL) can be feasibly integrated into higher-secondary schools in Afghanistan, producing substantial gains in collaboration, communication, and critical thinking, alongside modest improvements in content learning, despite constraints from exam-focused curricula and limited resources. The findings highlight the critical role of teacher facilitation, structured scaffolding, and contextual adaptation in shaping outcomes, while also pointing to limitations in sample size, timeframe, and regional coverage that call for caution in large-scale adoption. To build on this evidence, future research should investigate long-term impacts of PBL across diverse Afghan regions, explore strategies to better foster creativity under resource constraints, and examine how policy alignment and capacity-building initiatives can enable sustainable scaling of PBL in fragile education contexts.

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