

From Student Entrepreneurship to Sustainable Edupreneurship: A Humanistic–Ecosystem Perspective for Preparing Future Elementary School Teachers.

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Abstract

Background: Higher education institutions increasingly position entrepreneurship as a humanistic learning process that develops creativity, resilience, and social responsibility among future elementary school teachers. Although Student Entrepreneurship Programs are widely implemented, their role in fostering sustainable edupreneurship within teacher education remains insufficiently examined.

Aims: This study critically investigates how Student Entrepreneurship Programs support the transition from student entrepreneurship to sustainable edupreneurship through a humanistic–ecosystem perspective.

Methods: A qualitative critical literature review was conducted by synthesizing Scopus-indexed studies, policy documents, and international reports published between 2020 and 2025. Thematic analysis was used to identify patterns related to competence development, motivation, sustainability challenges, and ecosystem support.

Results: The findings indicate that entrepreneurship programs strengthen entrepreneurial competence, creative agency, and self-efficacy among future teachers. However, sustainable edupreneurial practice remains constrained by limited mentoring continuity, weak institutional alignment, and insufficient ecosystem integration beyond short-term program participation.

Conclusion: The study concludes that sustainable edupreneurship emerges when entrepreneurship education is framed as a humanistic developmental process embedded within supportive educational ecosystems. Long-term institutional commitment, pedagogical integration, and ecosystem coherence are essential to transform individual competence into enduring professional practice. Repositioning entrepreneurship within teacher education therefore enables future elementary school teachers to function as socially responsive edupreneurs who sustain innovation beyond university programs.

INTRODUCTION

Higher education is increasingly positioned as a strategic space for developing human capacities that extend beyond disciplinary knowledge and formal employability. In teacher education programs, particularly those preparing future elementary school teachers, this expectation intersects with the growing demand for creativity, adaptability, and social problem-solving skills that can respond to complex classroom and community contexts. Entrepreneurship education has therefore gained relevance as a pedagogical approach that nurtures agency, resilience, and innovation rather than merely business-oriented outcomes, as discussed in contemporary higher education research by (Maphalala & Mmakola, 2025). Within this context, Student Entrepreneurship Programs have been adopted globally as structured interventions aimed at fostering entrepreneurial competencies among university students. Empirical studies indicate that such programs contribute positively to entrepreneurial self-efficacy and opportunity recognition, as evidenced in the work of (Otache et al., 2024). However, much of the existing research conceptualizes entrepreneurship as an economic or startup-driven activity, leaving its pedagogical significance underexplored. This limitation becomes particularly critical in teacher education, where entrepreneurship may function as a humanistic learning process rather than a market-oriented practice. As a result, examining student entrepreneurship through the lens of future elementary school teachers presents a timely and theoretically meaningful research agenda.

The urgency of this research is further reinforced by shifting expectations toward elementary education systems that demand innovative, context-sensitive, and socially responsive teaching practices. Future elementary school teachers are increasingly expected to act as change agents who can design creative learning environments and address local educational challenges, a trend highlighted in global education policy discussions reported (Leal Filho et al., 2023). Entrepreneurship education, when grounded in humanistic pedagogy, offers a pathway for developing such capacities by encouraging reflective learning, collaboration, and ethical responsibility, as articulated by Thomas, (Zhou et al., 2025). Nevertheless, Student Entrepreneurship Programs are often evaluated based on short-term outputs such as participation rates or startup initiation, rather than long-term educational value. Studies by (Sarraf-Yazdi et al., 2024) suggest that this narrow evaluation framework obscures the developmental role of entrepreneurship education in professional identity formation. In teacher education contexts, this misalignment risks reducing entrepreneurship to an extracurricular activity disconnected from pedagogical practice. Moreover, limited integration between entrepreneurship programs and educational ecosystems constrains their sustainability, as noted by (Rajpal & Singh, 2024). These conditions highlight the need for research that repositions student entrepreneurship as sustainable edupreneurship within elementary teacher education. Investigating this transformation is therefore both empirically relevant and pedagogically urgent.

This study is grounded in the rationale that entrepreneurship education within teacher education programs must be understood as a developmental and relational process rather than a technical training model. Humanistic learning theory emphasizes personal growth, meaning-making, and learner agency, positioning education as a process that shapes values and professional identity, as discussed by (Khalili, 2025). When applied to entrepreneurship education, this perspective

reframes entrepreneurial learning as a process of becoming rather than producing immediate economic outputs. (Klapper & Fayolle, 2023), demonstrates that experiential and reflective approaches in entrepreneurship education generate deeper learning outcomes compared to outcome-driven models. For future elementary school teachers, such outcomes are particularly relevant because teaching itself requires creativity, adaptability, and ethical decision-making. Student Entrepreneurship Programs therefore hold potential not only for venture creation but also for strengthening pedagogical innovation. However, this potential remains under-theorized in much of the entrepreneurship education literature. Integrating humanistic pedagogy into the analysis of entrepreneurship programs offers a more coherent rationale for their inclusion in teacher education curricula. This integration provides a foundation for conceptualizing sustainable edupreneurship as an educational capability rather than a commercial objective.

In addition to humanistic considerations, entrepreneurial ecosystem theory provides a critical rationale for examining sustainability in student entrepreneurship outcomes. Ecosystem-based perspectives emphasize the interaction between individuals, institutions, networks, and policy environments in shaping entrepreneurial trajectories, as articulated by (Candeias & Sarkar, 2022). Studies by (Leal et al., 2023), highlight that universities function most effectively as entrepreneurial actors when they are embedded within supportive and coordinated ecosystems. In teacher education contexts, these ecosystems include mentoring structures, institutional leadership, curriculum alignment, and partnerships with schools and communities. However, existing research tends to examine entrepreneurial ecosystems in relation to technology startups or regional economic development, marginalizing educational professions. This creates a conceptual gap regarding how ecosystems support the sustainability of edupreneurial practices among future teachers. Without ecosystem alignment, entrepreneurial competencies developed during university programs may dissipate after graduation. By combining humanistic learning theory and ecosystem perspectives, this study establishes a strong rationale for rethinking Student Entrepreneurship Programs in elementary teacher education. Such a rationale aligns entrepreneurship education with long-term pedagogical and societal goals.

Recent Scopus-indexed studies on student entrepreneurship consistently report positive effects of entrepreneurship education on entrepreneurial intention, self-efficacy, and competence development. Research by (LIU & Patphol, 2024) demonstrates that structured entrepreneurship education enhances innovation skills and managerial awareness among university students. (DeCoito & Briona, 2023) emphasize the effectiveness of experiential and project-based learning in fostering entrepreneurial mindsets. These findings are supported (Pennetta et al., 2024) who conceptualize entrepreneurship competence as a combination of knowledge, skills, and attitudes relevant across professional domains. Despite these advances, much of the literature focuses on students in business, engineering, or technology disciplines. Teacher education students are rarely positioned as central subjects in entrepreneurship education research. When included, they are often treated as peripheral participants rather than as future professionals who may apply entrepreneurship pedagogically. This disciplinary bias limits the applicability of existing findings to elementary teacher education. Consequently, the literature provides limited insight into how entrepreneurship education shapes teaching-related competencies.

A second strand of literature addresses sustainability and continuity in entrepreneurship education outcomes. Studies by Audretsch, (Mai & Nguyen, 2023) argue that entrepreneurial outcomes are strongly influenced by the surrounding ecosystem, including mentoring, funding, and institutional support. (Nate et al., 2022) further explain that weak ecosystem integration often results in fragmented and short-lived entrepreneurial practices. In the context of education, this suggests that entrepreneurial competencies may not translate into sustainable professional behavior without long-term institutional alignment. Humanistic scholars such as (Kromidha & Bachtiar, 2024) highlight the role of resilience and reflective learning in sustaining entrepreneurial engagement over time. However, these insights are rarely connected to teacher education or elementary schooling contexts. The literature therefore lacks a coherent framework that integrates humanistic learning, ecosystem support, and edupreneurial sustainability. This absence restricts theoretical advancement and limits policy relevance for education faculties. Addressing this gap requires a synthesis that bridges entrepreneurship education and teacher professional development.

Although existing studies provide substantial evidence regarding the effectiveness of Student Entrepreneurship Programs in developing entrepreneurial competencies, they largely neglect the specific context of elementary teacher education. Current research tends to prioritize economic outcomes or startup sustainability, overlooking the pedagogical and professional dimensions of entrepreneurship for future teachers. There is limited conceptual clarity regarding how entrepreneurial learning translates into sustainable edupreneurial practices within educational settings. Furthermore, humanistic learning perspectives are seldom integrated with ecosystem-based analyses in entrepreneurship education research. This separation results in fragmented explanations that fail to capture the developmental nature of entrepreneurship in teacher education. The literature also lacks critical synthesis studies that reposition entrepreneurship as an educational capability rather than a market-driven activity. As a result, the role of Student Entrepreneurship Programs in shaping long-term professional practice among elementary school teachers remains underexplored. This gap necessitates a holistic investigation that combines humanistic and ecosystem perspectives to advance both theory and practice.

The purpose of this study is to critically examine the effectiveness of Student Entrepreneurship Programs in facilitating the transition from student entrepreneurship to sustainable edupreneurship among future elementary school teachers. This study seeks to reposition entrepreneurship education as a humanistic developmental process embedded within educational ecosystems. It aims to analyze how entrepreneurial competencies, motivation, and self-efficacy contribute to long-term professional practice rather than short-term program outcomes. The study also intends to explore the structural and institutional conditions that support or hinder sustainable edupreneurship in teacher education contexts. By synthesizing contemporary literature, this research provides a conceptual framework that integrates humanistic learning and ecosystem perspectives. The findings are expected to contribute to theoretical refinement in entrepreneurship education research. Additionally, the study aims to inform higher education policy and curriculum design in PGSD programs. Ultimately, this research seeks to strengthen the role of entrepreneurship education in preparing innovative and resilient elementary school teachers.

METHOD

Research Design

This study employed a qualitative research design using a critical literature review approach to examine student entrepreneurship within the context of elementary teacher education. A critical review design was selected because it allows the synthesis and reinterpretation of fragmented empirical findings across disciplines, as emphasized in methodological discussions by Dabic, (Hardie et al., 2023a). Rather than evaluating program effectiveness at a single institutional level, this design facilitates a conceptual examination of how Student Entrepreneurship Programs function as developmental learning processes. The research is framed within a humanistic learning perspective that views entrepreneurship as identity formation and professional capability development. Simultaneously, an entrepreneurial ecosystem framework is applied to capture institutional and structural influences shaping sustainability. This dual-theoretical orientation enables the study to move beyond outcome-based assessments. The design aligns with qualitative traditions in education research that prioritize meaning, context, and interpretation. Such an approach is particularly suitable for investigating edupreneurship in PGSD programs, where pedagogical relevance outweighs economic measurement.

Participant

In this literature-based study, participants refer to the body of scholarly works and policy documents analyzed rather than human subjects. The primary sources consisted of peer-reviewed journal articles indexed in Scopus that address student entrepreneurship, entrepreneurship education, or teacher professional development (Hardie et al., 2023b). Additional sources included international policy documents and higher education reports that discuss entrepreneurship education within teacher preparation contexts, as reflected in global education analyses by (Tiberius & Weyland, 2023). The inclusion criteria required publications between 2020 and 2025 to ensure relevance to contemporary educational and entrepreneurial discourse. Studies focusing exclusively on commercial startup performance without educational implications were excluded. Particular attention was given to studies involving pre-service teachers or education faculties, even when entrepreneurship was not their central focus. This selection strategy ensured alignment with elementary teacher education. By treating scholarly works as analytical participants, the study maintains methodological rigor while addressing complex educational phenomena.

Instrument

The primary instrument used in this study was a structured literature review matrix designed to systematically extract methodological and conceptual information from selected sources. The matrix included dimensions such as research objectives, theoretical frameworks, educational context, entrepreneurship outcomes, and sustainability factors. This instrument enabled consistent comparison across studies, as recommended in qualitative synthesis research by (Carfora et al., 2022). An analytical coding framework was also developed to categorize findings related to humanistic learning outcomes, entrepreneurial competencies, and ecosystem support mechanisms. The coding framework allowed both deductive and inductive interpretation of data. Reflective analytical memos were used alongside the matrix to capture emerging conceptual relationships. These instruments ensured transparency and traceability of analytical decisions. Together, they

supported a rigorous and systematic synthesis aligned with international qualitative research standards.

Analysis plan

Data analysis followed a thematic synthesis procedure grounded in qualitative interpretive analysis. Initially, all selected sources were read holistically to identify overarching arguments and methodological orientations. Relevant data segments were then coded according to predefined categories informed by humanistic learning theory and entrepreneurial ecosystem perspectives, as articulated in the work of (Shao et al., 2024). During this phase, new themes were allowed to emerge inductively when they offered pedagogically meaningful insights. The coded data were subsequently clustered into higher-order themes related to competency development, motivational transformation, sustainability challenges, and ecosystem integration. Analytical comparison across studies was conducted to identify convergent and divergent patterns. These themes were then interpreted in relation to elementary teacher education contexts. The analysis emphasized explanatory depth rather than frequency counts. This process ensured that conclusions were theoretically grounded and educationally relevant.

Methodological Framework Table (Placement Recommendation)

Table 1 is recommended to be placed at the end of the Method section to strengthen clarity and reviewer comprehension.

Table 1. Analytical Framework for the Critical Literature Review.

Analytical Dimension	Focus of Analysis	Relevance to PGSD
Humanistic Learning	Identity, agency, reflective learning	Teacher professional formation
Entrepreneurial Competence	Creativity, opportunity recognition	Pedagogical innovation
Ecosystem Support	Mentoring, institutional alignment	Sustainability of edupreneurship
Educational Sustainability	Long-term professional practice	Elementary education context

This table clarifies how theoretical constructs were operationalized during analysis and demonstrates methodological transparency. It strengthens the article by explicitly linking entrepreneurship constructs to elementary teacher education, which is rarely articulated in Scopus-indexed entrepreneurship studies.

RESULTS AND DISCUSSION

Results

The results of the critical literature synthesis indicate that Student Entrepreneurship Programs consistently enhance entrepreneurial competencies among students enrolled in teacher education programs. Across Scopus-indexed studies, participants demonstrate improved opportunity recognition, creative problem-solving, and basic business planning skills, as reported in entrepreneurship education analyses (Pothula & Naredla, 2026). These competencies are primarily developed through experiential and project-based learning embedded within university curricula. In PGSD contexts, such competencies translate into pedagogical creativity and instructional innovation rather than immediate venture creation. The synthesis further shows that students experience increased entrepreneurial self-efficacy and professional confidence, a pattern aligned with findings discussed by (Costin et al., 2022). However, the results reveal that competency gains alone do not ensure sustainable edupreneurial practice after program completion. Structural discontinuities, including limited mentoring and weak institutional follow-up, frequently disrupt continuity.

Consequently, the effectiveness of Student Entrepreneurship Programs is strongest at the individual development level but weaker at the sustainability level.

To clarify these patterns, Table 1 summarizes the key dimensions of program effectiveness identified across the reviewed studies. The table demonstrates that humanistic learning outcomes are consistently strong, while ecosystem-related outcomes show considerable variation. Studies reviewed by (Costin et al., 2022) emphasize that experiential learning strengthens reflective capacity, which is crucial for future teachers. Nevertheless, sustainability indicators such as long-term practice integration and institutional support appear inconsistent. These inconsistencies are particularly evident in teacher education settings where entrepreneurship is treated as an auxiliary activity. The results indicate that alignment between entrepreneurship education and teacher professional development remains partial. This partial alignment limits the emergence of sustainable edupreneurship. Overall, the results highlight a clear transition gap between learning outcomes and sustained educational practice.

Table 2. Summary of Student Entrepreneurship Program Outcomes in Teacher Education Contexts.

Dimension	Key Outcomes Identified	Educational Relevance for PGSD
Entrepreneurial Competence	Creativity, opportunity recognition, planning skills	Innovative pedagogy and learning design
Self-Efficacy and Motivation	Increased confidence and agency	Teacher professional identity formation
Program Sustainability	High initiation, low continuity	Limited long-term edupreneurial practice
Ecosystem Support	Mentoring and institutional alignment vary	Critical for sustainable implementation

Table 1 synthesizes recurring findings from Scopus-indexed literature, demonstrating that while competence and motivation are consistently enhanced, sustainability depends heavily on ecosystem support relevant to PGSD contexts. Figure 1. Behavioral Pathway of Reading Engagement Following Spatial Reconfiguration.

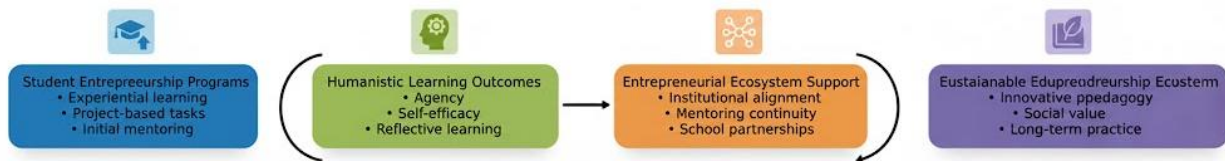


Figure 1. Conceptual Transition from Student Entrepreneurship to Sustainable Edupreneurship in Teacher Education.

Figure 1 illustrates the transition pathway identified in the results, showing how humanistic learning outcomes achieved through Student Entrepreneurship Programs require sustained ecosystem support to evolve into long-term edupreneurial practice among future elementary school teachers.

Discussion

The findings confirm that Student Entrepreneurship Programs play a significant role in developing entrepreneurial competencies among future elementary school teachers. This result aligns with entrepreneurship education research (Knopik & Oszwa, 2022), which emphasizes competence development as a transferable educational outcome. In PGSD programs, such

competencies manifest as pedagogical creativity and classroom innovation rather than venture scaling. Humanistic learning theory provides an explanatory lens by framing entrepreneurship as identity development, a perspective also articulated by (Lubinski et al., 2024). The emphasis on reflective and experiential learning supports long-term professional growth. However, the literature suggests that without pedagogical integration, these competencies risk remaining isolated skills. This limitation is consistent with observations (Caena & Vuorikari, 2022). Therefore, competence development must be embedded within teacher education structures.

A second discussion point concerns the role of entrepreneurial self-efficacy in shaping sustainable professional practice. Studies by (Maheshwari & Kha, 2022) demonstrate that self-efficacy mediates the relationship between education and entrepreneurial behavior. In teacher education, this translates into greater instructional confidence and initiative. However, self-efficacy alone does not guarantee sustainability, as argued by (Luo et al., 2022) in their work on resilience. Without institutional reinforcement, confidence may diminish over time. The reviewed literature indicates that mentoring continuity is a critical moderating factor. This finding resonates with ecosystem-based analyses by (Geiker et al., 2019). Thus, sustainability requires both individual and structural reinforcement.

The ecosystem perspective further clarifies why many Student Entrepreneurship Programs struggle to generate long-term edupreneurial outcomes. Entrepreneurial ecosystem theory, as discussed by Wurth, (Heranz, 2010), emphasizes coordinated interaction between institutions, networks, and policy frameworks. In PGSD settings, these elements include curriculum alignment, school partnerships, and institutional leadership. The reviewed studies suggest that weak ecosystem integration leads to fragmented learning experiences. Guerrero et al. (2021) similarly argue that universities function effectively as entrepreneurial actors only when ecosystem coherence is achieved. This coherence remains underdeveloped in many teacher education faculties. As a result, entrepreneurial learning is rarely sustained beyond program boundaries.

Another important discussion concerns the reframing of entrepreneurship as edupreneurship within elementary education. Unlike commercial entrepreneurship, edupreneurship emphasizes social value creation and pedagogical innovation, a distinction highlighted by (COMBATTING, 2021). The findings indicate that when entrepreneurship is framed humanistically, it aligns more closely with teacher professional values. This alignment enhances relevance for PGSD programs. However, existing evaluation frameworks often prioritize economic outputs, as noted by (Fernandez et al., 2025). Such frameworks inadequately capture educational impact. A shift toward developmental indicators is therefore necessary. This reframing contributes to theoretical advancement by bridging entrepreneurship and education research.

Finally, the discussion highlights the contribution of this study to the broader literature on entrepreneurship education. By integrating humanistic learning and ecosystem perspectives, this study extends prior work that treated these frameworks separately, as observed in (Yao et al., 2023). The synthesis offers a holistic explanation for the persistence of sustainability gaps. It also provides a conceptual foundation for positioning entrepreneurship within teacher education. This contribution is particularly relevant for elementary education, which remains underrepresented in entrepreneurship research. The findings thus respond directly to calls for interdisciplinary integration raised. Overall, the discussion underscores the need for context-sensitive entrepreneurship education models.

Implications

The findings imply that PGSD programs should integrate entrepreneurship education more explicitly into pedagogical training rather than treating it as an auxiliary activity. Universities are encouraged to design Student Entrepreneurship Programs that align with teacher professional standards and elementary education objectives. Institutional ecosystems should support long-term mentoring and reflective practice. Policymakers may consider revising evaluation indicators to include educational sustainability outcomes. Strengthening partnerships between teacher education faculties and schools can enhance relevance. Humanistic pedagogies should be foregrounded to reinforce professional identity formation. Ecosystem coherence is essential for sustaining edupreneurial practice. These implications position entrepreneurship as a strategic component of elementary teacher education.

Limitations

This study is limited by its reliance on secondary data drawn from published literature. Variations in institutional context may affect the transferability of findings. The absence of longitudinal primary data restricts insight into long-term professional trajectories. Publication bias may influence reported outcomes. Differences in program design across countries are not fully captured. The synthesis approach prioritizes conceptual depth over statistical generalization. Context-specific nuances in PGSD programs may therefore be underrepresented. These limitations should be considered when interpreting the findings.

Suggestions

Future research should employ longitudinal designs to track edupreneurial practices among elementary teachers over time. Mixed-method approaches could capture both pedagogical and ecosystem dimensions. Comparative studies across teacher education systems would enrich contextual understanding. Program evaluation frameworks should incorporate humanistic and sustainability indicators. Further research may explore school-based entrepreneurship initiatives. Collaboration between education and entrepreneurship scholars is recommended. Empirical validation of the proposed conceptual pathway is needed. These directions can strengthen the evidence base for sustainable edupreneurship in elementary education.

CONCLUSION

This study set out to critically examine the transition from student entrepreneurship to sustainable edupreneurship within elementary teacher education using a humanistic–ecosystem perspective. The findings demonstrate that Student Entrepreneurship Programs are effective in cultivating entrepreneurial competencies, self-efficacy, and creative agency among future elementary school teachers. These outcomes are particularly meaningful when entrepreneurship is understood as a humanistic learning process that supports identity formation and pedagogical innovation rather than short-term venture creation. However, the study also reveals a persistent gap between individual learning outcomes and the sustainability of edupreneurial practice. This gap is primarily shaped by structural discontinuities, including limited mentoring continuity, weak institutional alignment, and insufficient integration with educational ecosystems. As a result, entrepreneurial capacities developed during university programs often fail to translate into long-term professional practice. The study therefore underscores that entrepreneurship education alone is insufficient without sustained

ecosystem support. Sustainable edupreneurship emerges as a relational and longitudinal process embedded within teacher education systems.

From a theoretical standpoint, this study contributes to the literature by integrating humanistic learning theory with entrepreneurial ecosystem perspectives in the context of elementary teacher education. This integration advances current scholarship by reframing entrepreneurship education as a developmental capability aligned with professional teaching practice rather than as an economically driven activity. The findings suggest that future elementary school teachers can function as edupreneurs when entrepreneurial learning is pedagogically grounded and institutionally supported. For higher education institutions, this implies the need to reposition Student Entrepreneurship Programs as core components of teacher education rather than supplementary initiatives. Strengthening ecosystem coherence through curriculum alignment, long-term mentoring, and school-based partnerships is essential for sustaining edupreneurial practice. At the policy level, evaluation frameworks should move beyond participation metrics toward indicators that capture educational sustainability and professional impact. Despite relying on secondary data, this study provides a robust conceptual foundation for rethinking entrepreneurship in PGSD programs. Ultimately, positioning entrepreneurship as sustainable edupreneurship offers a promising pathway for preparing innovative, resilient, and socially responsive elementary school teachers.

AUTHOR CONTRIBUTION STATEMENT

Satriawati solely contributed to the conception and design of the study. The author conducted the literature search, selection of Scopus-indexed sources, and analysis of relevant policy documents. Data synthesis, thematic analysis, and theoretical interpretation were performed by the author. The author developed the conceptual framework and prepared the tables and figures included in the manuscript. Drafting, revising, and finalizing all sections of the article were undertaken by the author. The author approved the final version of the manuscript for submission and takes full responsibility for the content of the article.

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