Learning and Earning Program: A Transferable Implemented Model Supporting Secondary Agricultural Education in Nepal

Aastha Adhikari

The Pennsylvania State University

386 Shortlidge Rd, 009 Ferguson Building

University Park, PA 16802

afa6653@psu.edu

Dr. Suzanna Windon

The Pennsylvania State University

386 Shortlidge Rd, 209B Ferguson Building

University Park, PA 16802

sxk75@psu.edu

Introduction / Need for Innovation: Despite broad consensus that experiential learning is central to effective agricultural education (Roberts, 2006), student discontinuation in secondary technical agriculture programs remains high, particularly among economically vulnerable populations where opportunity costs intensify dropout risk (Hunt, 2008; Sabates et al., 2013). Programs face interrelated challenges: sustaining engagement when instruction remains theoretical and disconnected from economic realities (Gilbert et al., 2023; Ghosh & Ravichandran, 2024; World Bank et al., 2023), and implementing experiential approaches coherently and equitably (Knobloch & Smith, 2024; Quesada et al., 2020). Technical and vocational education and training (TVET) scholarship identifies persistent gaps between training and employability when learning lacks linkages to practice and market conditions (Lamsal & Bajracharya, 2022). Addressing these challenges requires models that simultaneously strengthen experiential learning quality and reduce economic barriers to completion. This innovative idea presents Nepal's Learning and Earning program, a nationally implemented model in 240 schools that directly addresses both challenges by embedding supervised income-generating enterprises within curriculum-required experiential learning. Governed by formal operational guidelines, the program targets economically vulnerable secondary-level students in technical streams (MoEST 2022, Pandey, 2023). While contexts differ, the model offers transferable principles for strengthening equity, persistence, and work-based learning in U.S. school-based agricultural education (SBAE) and Career and Technical Education (CTE) programs.

How It Works/Methodology/Program Phases/Steps: Schools submit competitive proposals to MoEST demonstrating student need, supervision capacity, and enterprise feasibility. Approved schools receive NPR 1,000,000 (USD ~$7,500) annual seed funding for up to three years to establish sustainable enterprises. Implementation proceeds through four steps:

a. **Governance:** Upon receiving funding, schools establish a management committee (head teacher, school management members, technical coordinator, student representatives) responsible for supervision, financial oversight, reporting, and student protection.
b. **Student Selection:** Participants are selected from technical agriculture streams using transparent economic hardship and dropout risk criteria. Selected students form supervised enterprise groups with defined participation and earning expectations.
c. **Enterprise Implementation:** Schools select context-appropriate enterprises aligned with curriculum competencies, market conditions, and safety. Enterprise sites function as learning laboratories where all students complete required practicals, while Learning and Earning participants contribute additional supervised hours in production, record-keeping, quality control, and marketing.
d. **Distribution and Reinvestment:** Net earnings follow a context-dependent strategy, popularly up to 60% to participating in students, up to 30% reinvested for future cycles, and up to 10% for student support or equipment. All transactions are recorded, committee-reviewed, and reported to MoEST to maintain continued funding eligibility (MoEST, 2022).

Results to Date/ Implementation Insights: This model was implemented and documented at Shree Panchakanya Secondary School, Bhojpur District, Nepal, between June 2022 and July 2024. The school's location, characterized by low population density, limited purchasing power,

minimal transportation, and seasonal road inaccessibility, provided a rigorous test in resource-constrained settings. The documented outcomes presented here reflect this two-year implementation period. The program has since continued at Shree Panchakanya under new coordination, and currently the same model operates across 240 schools nationally. Participating students earned approximately NPR 15,000 (~USD $115) per three-month cycle through combined enterprise activities, including oyster mushroom cultivation (which generated NPR 40,000 net profit, representing 100% margin), vegetable production, and apiculture, a substantial contribution in rural contexts where household income is limited, meaningfully offsetting educational costs such as textbooks and examination fees. Three critical implementation lessons emerged. First, enterprise selection must prioritize market access over production capacity; value-added processing (e.g., mushroom dehydration) proved more viable than fresh produce sales in contexts with limited transportation infrastructure. Second, transparent governance and financial oversight were essential for maintaining equity and building stakeholder trust. Third, integrating enterprises into curriculum requirements rather than treating them as supplemental activities increased teacher commitment and enhanced program sustainability.

Advice to Others: This model offers four transferable principles for U.S. SBAE and CTE programs seeking to strengthen experiential learning while supporting economically vulnerable students. First, integrate enterprise work into assessed curriculum outcomes rather than treating it as a supplemental activity. Second, formalize supervision through management committees that establish clear roles and financial accountability. Third, concentrate on enterprise activities to reduce fragmentation, enabling stronger supervision and shared learning. Fourth, establish transparent earning distribution formulas that directly benefit participating students while sustaining program operations. U.S. programs can adapt this approach by organizing student enterprise cooperatives within existing SAE infrastructure, particularly in Title I schools or programs serving families where economic barriers affect persistence. Enterprise selection should prioritize local market viability and post-harvest infrastructure over production capacity alone. By positioning supervised, income-generating enterprises as a core instructional strategy, this model transforms SAE from an optional enrichment into an equity-centered approach addressing both learning outcomes and economic realities shaping student continuation.

Costs / Resources Needed: Minimum requirements include seed funding for enterprise inputs, access to enterprise space (owned or leased), basic production and processing materials, and sustained teacher coordination time (approximately 10 hours per week). Evidence from implementation indicates that human capacity, governance, and accountability mechanism**s** are more critical to success than physical infrastructure. Programs lacking startup capital may pursue partnerships with cooperatives or industry sponsors, consistent with established work-based learning partnerships.

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