

**Implication of community extension programs in technology on the lives of
beneficiaries: insights from
a mixed-method study**

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Abstract: Schools and universities must actively fulfill their role as engines of social change by running extension programs that uplift communities and transform lives. This study examines the impact of extension initiatives conducted by the College of Industrial Technology, College of Teachers Education specializing TLE and Bachelor of Technical- Vocational Teacher Education on beneficiaries' livelihoods, skills, and education. A mixed-methods approach was employed, combining survey and interviews to assess program effectiveness. Thematic analysis was applied to qualitative data from interviews to identify key patterns and insights, while quantitative analysis using mean and standard deviations measured beneficiaries' perceptions of program effectiveness. A post hoc analysis was then conducted to compare outcomes across colleges and programs in terms of their extension projects initiative. The study reveals that extension programs of CIT, CTE, and BTVTEd effectively address diverse community needs, with CIT exceptional in technical skills development, CTE empowering marginalized groups of Badjao particularly women through education and livelihood initiatives, and BTVTEd mitigating educational disruptions via alternative instructional delivery modes. Also, extension programs transformed livelihoods through job employment, small establishment, and sustainable self-employment opportunities. The consistently high ratings across all socio-economic indicators confirm their capacity to elevate community conditions while simultaneously preserving cultural assets. These findings collectively validate of the institutional-community partnerships as a powerful mechanism for delivering measurable, life-changing interventions that bridge education with real-world needs.

Keywords: socio-economic development, skills acquisition, educational enhancement

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INTRODUCTION

Community extension programs carried out by educational institutions serve as pivotal drivers of socio-economic development while enhancing educational opportunities for local communities. This research specifically examines the community extension initiatives conducted by Southern Luzon State University main campus, College of Industrial Technology, the College of Teacher Education specializing in Technology and Livelihood Education, and SLSU Lucena satellite campus, Bachelor of Technical-Vocational Teacher Education program. These extension programs are designed not only to benefit primary stakeholders but also to strengthen the overall institutional framework.

University-community partnerships, particularly in technological fields, offer meaningful avenues for collaboration that can foster sustainable development within partner communities (Mores, Lee & Bae, 2019). Burkhart-Kriesel, Weigle, and Hawkins (2019) emphasize the critical role of universities in reinforcing community engagement, thereby building lasting relationships,

partnerships, and networks. Through such high levels of engagement, stakeholders gain deeper insights into issues affecting communities, empowering them to make informed, actionable decisions (Llenares & Diocaris, 2018).

Despite the extensive adoption of community extension programs, there remains a notable gap in understanding how these initiatives impact the personal lives and experiences of their beneficiaries. To bridge this gap, this study employs a descriptive evaluative and narrative inquiry approach, offering a detailed exploration of the diverse effects these programs have. The focus is on capturing the stories and perspectives of beneficiaries and stakeholders to provide valuable insights that can help educators and community leaders assess the relevance and effectiveness of such initiatives. By emphasizing descriptive narratives, the study seeks to promote a more human-centered approach to designing and implementing future community programs, ensuring they address the specific needs and aspirations of partner communities. Through skills development, training, health education, and livelihood programs, these initiatives empower individuals, enhance health outcomes, promote social equity, and create economic opportunities. The collaboration between universities and communities plays a critical role in addressing the economic challenges of the Philippines and advancing toward a more equitable and sustainable future (Malibiran, 2023).

In line with the Higher Education Modernization Act of 1997, which emphasizes the integration of instruction, research, and community extension services, the Commission on Higher Education (CHED) has underscored the importance of extension programs in higher education institutions (Montalbo, 2016). CHED Memorandum Order No. 52, series of 2016, further establishes that these programs enable students to apply real-world, evidence-based solutions to the socio-economic and environmental challenges facing their partner communities. This policy supports the development of sustainable solutions aimed at improving the quality of life for the broader population.

The modalities of extension programs vary, but typically involve students and faculty in activities such as skills training, advocacy, technical consultancy, and technology transfer. Southern Luzon State University has long been committed to community extension activities, with a primary objective of enhancing quality of practical skills through demand-driven and research-based services. This sustained partnership has resulted in numerous successful projects that have directly benefited barangays and partner communities, underscoring the importance of assessing the broader socio-economic, educational, and institutional impacts of such initiatives.

However, it is imperative to examine the implications of these programs to ensure they align with community needs and contribute effectively to community development. This study aims to address this gap by evaluating the impact of the community extension programs implemented by selected satellite campuses—specifically those offering the College of Industrial Technology (CIT) and the College of Teacher Education (CTE) at Lucban, and Bachelor of Technical-Vocational Teacher Education (BTVTEd) at SLSU Lucena.

Problem Statement

The study aimed to determine the implication of community extension programs in technology on the lives of beneficiaries. Specifically, it sought to answer the following questions:

1. What are the programs and projects of CIT, CTE and BTVTEd implemented from 2018-2022?
2. What is the status of implementation of the different extension programs and projects of CIT, CTE and BTVTEd from 2018-2022 as to the following:

- 2.1 implementation;
- 2.2 monitoring;
- 2.3 assessment/ evaluation; and
- 2.4 feedback mechanism?
3. What is the outcome of the CIT, CTE and BTVTEd extension programs and projects as to:
 - 3.1 socio Economic development;
 - 3.2 skill acquisition; and
 - 3.3 educational enhancement?
4. How do different extension programs and projects differ in terms of the outcomes?
5. How do the CIT, CTE and BTVTEd extension programs and projects impact the lives of the beneficiaries?

Theoretical Framework

This research was anchored on the Theory of Change which is an ongoing process of discussion-based analysis and learning that produces powerful insights to support program design, strategy, implementation, evaluation, and impact assessment (Vogel, 2012). As a monitoring and implication assessment model, Theory of Change highlights the clear articulation of how program planners view the connection between inputs and outcomes with how the programs are intended to be implemented and how these can be sustainably improved.

Furthermore, this study's theoretical framework incorporates Sustainable Development Theory and Experiential Learning Theory to broaden its evaluative lens. Sustainable Development Theory emphasizes aligning these programs with long-term practices that contribute to Sustainable Development Goals (SDGs) in education and economic growth, while Experiential Learning Theory underscores the dual impact of these programs, benefiting community members through skill-building opportunities and providing students with practical, hands-on experience.

Extension programs are characterized by a focus on the needs of the target audience, the intent to influence participant learning and behavioral outcomes, multiple comprehensive activities, and the presence of formal evaluation (Rubio et al., 2016). Based on this framework, the researchers can assess the impact of technology-focused community extension programs on beneficiaries' lives. These activities were initiated and conducted by Southern Luzon State University's College of Industrial Technology and College of Teacher Education across its satellite campuses in Lucban and Lucena, as these are the only campuses offering both CIT, CIT and BTVTEd programs, along with their partner communities.

Studies have shown that community extension programs conducted by higher education institutions in the Philippines made significant positive impacts on the health and wellness, literacy skills, livelihood skills, environmental transformation, food and nutrition security residents of the partner communities (Codamon-Dugyon, 2016; Montalbo, 2016; Olavides et al., 2019; Salazar, 2020). With the vibrant culture of extension and volunteerism in UB, it is paramount that the university conducts monitoring and evaluation of outcomes of the community programs and projects at the grassroots level (Llenares & Deocaris, 2018). Evaluation and assessment are the bases for making strong impact statements so that stakeholders would know the difference the institution is making in the lives of the beneficiaries of the varied implemented community extension programs.

METHODOLOGY

Research design

This study adopts a descriptive-evaluative and narrative inquiry research design, integrating both quantitative and qualitative approaches to provide a comprehensive analysis of the impacts of community extension programs in technology-related courses on the lives of beneficiaries. The descriptive-evaluative component assesses the socio- economic, skill, and educational outcomes of the programs, while also exploring the lived experiences and personal stories of the beneficiaries. This questionnaire was validated by educational experts to test its internal accuracy and a Cronbach's alpha indicating a level of reliability.

Wherein qualitative aspect employs a narrative inquiry approach, using semi- structured interviews to gain a deeper understanding of the project leader and faculty members' perspectives on the program's implementation. This method facilitates a thorough exploration of individual experiences, shedding light on how the programs and projects of CIT, CTE and BTVTed have influenced the lives of the community. By capturing detailed personal narratives from the project leader and faculty, the study enriches the quantitative findings with valuable context and depth.

Ethical considerations are central to the qualitative component, ensuring the protection of participants' rights, privacy, and well-being. Responses will remain confidential, with all identifiable information securely stored and accessible only to the researcher. Anonymity will be strictly upheld throughout the research process. Participants will have the freedom to skip any questions they find uncomfortable or sensitive. Their emotional well-being will be carefully monitored, especially when discussing topics such as socio-economic challenges or educational experiences. These ethical measures aim to foster a respectful, supportive, and safe environment for all participants.

By combining descriptive-evaluative and narrative inquiry methods, the study seeks to create a holistic understanding of the programs' impacts. The integration of statistical analysis from the quantitative data with the detailed accounts from qualitative narratives ensures a balanced and comprehensive evaluation. This dual approach not only measures the tangible outcomes but also highlights the personal and transformative effects of the programs on the beneficiaries.

Respondents of the study

The respondents were selected from among beneficiaries of community extension programs conducted by the College of Industrial Technology (CIT) and the College of Teacher Education (CTE), specifically Technology and Livelihood Education and enrolled in the Bachelor of Technical-Vocational Teacher Education (BTVTed) program. Two sampling methods were employed: purposive sampling for the quantitative approach and criterion sampling for the qualitative approach.

Selection and Description of Respondents

This study employs a mixed-methods sampling approach to comprehensively evaluate the community extension programs. For the quantitative component, thirty (30) respondents comprised of community members who actively participated in the technology and livelihood-focused initiatives conducted by CIT, CTE and BTVTed.

The qualitative insights from five (5) key informants utilized criterion sampling to select project leaders, faculty implementers, and community partners with: (1) at least two years of direct experience in designing or managing these vocational-technical programs, and (2) substantial

involvement in the specific TLE-related extension activities under investigation. This dual approach enables both broad outcome measurement and in- depth understanding of program implementation, providing a complete assessment of the extension programs' socio-economic and educational impacts.

Data Gathering Instruments

The structured surveys are the primary instrument for the quantitative aspect of the study. These surveys are designed to collect measurable data on socio-economic development, skill acquisition, and educational outcomes from community beneficiaries, providing valuable insights into their lived experiences as well as the perspectives of those involved in program implementation.

For the qualitative component, self-administered semi-structured questionnaire are used as the main research tool. These guides facilitate in-depth interviews with institutional beneficiaries, such as project leaders, faculty members and community partners. The open-ended nature of the questions allows for flexibility in exploring individual narratives, while still maintaining a focus on the study's objectives. Together, these instruments ensure a comprehensive data collection process, combining the precision of quantitative measures with the depth of qualitative narratives, thus enabling a holistic evaluation of the programs' impact.

Data Gathering Procedure

Prior to data collection, several preparatory steps were undertaken. First, formal approval was requested from the Office of the University President and the Office of Extension Services at Southern Luzon State University's (SLSU) Main Campus. Additionally, permissions were secured from both the main campus in Lucban specifically targeting the Colleges of Industrial Technology (CIT) and Teacher Education (CTE) and the satellite campus in Lucena City, which offers the Bachelor of Technical-Vocational Teacher Education (BTVTEd) program. These campuses were selected because they were the only SLSU locations (main and satellite) that offered technology-related extension initiatives and had partner communities from 2018 to 2022. To ensure ethical compliance, all participants provided informed consent before data collection. The consent form outlined the study's purpose, data confidentiality protocols, and participants' rights.

For quantitative data collection, structured questionnaires were distributed using purposive random sampling to select community extension beneficiaries from 2018 to 2022. Respondents completed the surveys in person, and the results were analyzed accordingly.

For qualitative data collection, in-depth interviews were conducted with project leaders, faculty members, and community partners. The data were analyzed using thematic analysis by assigning codes to responses and identifying overarching themes. All responses were anonymized to maintain confidentiality.

Data Analysis Procedure

The statistical treatment of the data involved various statistical treatment which include descriptive statistics to summarize and describe the main features of the survey data such as mean and standard deviation to provide a clear picture of the socio-economic and educational outcomes of beneficiaries. A post hoc analysis was then conducted to compare outcomes across colleges and programs in terms of their extension programs and projects. For qualitative data analysis, thematic analysis is employed to examine the qualitative data gathered from interviews and focus groups. This involved identifying common themes, patterns, and insights related to the impact of the

programs on beneficiaries' lives. The data were coded and categorized to provide a deeper understanding of the programs' effectiveness and areas for improvement.

DISCUSSION OF FINDINGS

The study revealed that extension programs and projects are designed to address the needs of the community, with CIT prioritizing technical skills development, CTE focuses on women empowerment through education and livelihood activity, and BTVTEd addressing immediate educational disruptions through alternative instructional delivery modes.

In socio-economic outcomes, both CIT and CTE colleges together with BTVTEd program contributed positively to development, though CIT and BTVTEd showed stronger perceived impacts "highly effective" in livelihood and employment outcomes.

For skill acquisition, both colleges CIT and CTE as well as the BTVTEd program successfully enhanced skills, with BTVTEd perceived as most effective, followed closely by CIT. CTE, while still highly effective, received slightly lower ratings in some areas.

In terms of educational enhancement, CIT and BTVTEd were consistently rated as "Highly Effective" across most indicators, while CTE was generally perceived as "Effective."

Both colleges of CIT and CTE along with BTVTEd program contributed positively to socio-economic development. CIT and BTVTEd had a stronger perceived impact, particularly in livelihood and employment-related outcomes. CTE, though still beneficial, may require further enhancement to match the effectiveness of the other programs.

The results show extension programs and projects effectively enhance skills development, increase livelihood options, improve basic literacy, and cultural revitalization in the lives of beneficiaries. These results demonstrate how institutional-community partnerships create tangible, multidimensional benefits.

CONCLUSION

Based on the results of the study, the following conclusions are drawn:

The extension programs of CIT, CTE, and BTVTEd effectively address diverse community needs, with CIT exceptional in technical skills development, CTE empowering marginalized groups of Badjao particularly women through education and livelihood initiatives, and BTVTEd mitigating educational disruptions via alternative instructional delivery modes.

Extension programs have demonstrated beneficial in enhancing skills development, expanding livelihood opportunities, improving basic literacy, and contributing to cultural revitalization. These achievements highlight the transformative power of institutional-community partnerships in creating multidimensional benefits.

The extension program significantly impacted the life of beneficiaries by enhancing skills, boosting socio-economic status, revitalized culture and empowering individuals to improve livelihood.

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