

Developing Supplementary Curricula to Foster Public-Mindedness Through Service-Learning and Community-Based Learning for Undergraduate Students at Tak Special Economic Zone Institute

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Abstract

This research aimed to develop and evaluate supplementary curricula designed to foster public-mindedness among undergraduate students at the Tak Special Economic Zone Institute, based on the integration of service-learning (SL) and community-based learning (CBL). The study had two objectives: (1) to construct and assess the appropriateness of the supplementary curricula, and (2) to compare students' levels of public-mindedness before and after participation. The research followed a developmental and quasi-experimental design. The curricula were developed through a systematic process and reviewed by ten experts in curriculum and pedagogy. Their evaluations indicated the overall appropriateness of the curricula was at the highest level (Mean = 4.51, SD = 0.37). Subsequently, the curricula were implemented with 24 undergraduate students. Data were collected using a validated public-mindedness scale, and paired-sample t-tests were conducted to compare pretest and posttest scores. Findings demonstrated significant improvement in students' public-mindedness after participation. The overall mean increased from a moderate level before the intervention (Mean = 2.65, SD = 0.19) to the highest level afterward (Mean = 4.55, SD = 0.24), with all five components action for public benefit, collective-oriented cognition, respect for shared resources, responsibility and duty, and compassion, generosity, and solidarity showing statistically significant gains at the .01 level. The study concludes that supplementary curricula integrating SL and CBL are both appropriate and effective for cultivating public-mindedness. These results underscore the potential of higher education to nurture socially responsible graduates who can contribute to sustainable community and national development.

Keywords: Service-Learning, Community-Based Learning, Public-Mindedness

INTRODUCTION

The rapid advancement of technology and the pressures of a globalized economy have significantly reshaped social values and lifestyles, particularly in countries such as Thailand. Contemporary Thai society has increasingly emphasized material wealth, consumerism, and individual competition, often at the expense of communal well-being and moral development (Satayopas, 2011). As a result, problems such as corruption, environmental degradation, crime, and declining civic responsibility have become more pronounced. Among the younger generation, especially undergraduate students, these conditions have fostered an orientation toward consumerist values, placing possessions and status above moral or spiritual concerns. Consequently, there is a growing recognition of the urgent need to foster public-mindedness—defined as a sense of civic responsibility, altruism, and concern for the collective good—within higher education (Kamruang, 2012). The absence of public-mindedness has multiple consequences at both the individual and societal levels. At the individual level, neglecting one's social responsibilities can create personal conflicts, ethical dilemmas, and diminished self-worth. At the family and community levels, the erosion of public-mindedness contributes to weakening social bonds, rising conflicts, and disintegration of communal solidarity (Kamruang, 2012). At the national level, the lack of civic responsibility undermines trust in institutions, fosters corruption, and reduces collective capacity to address national challenges. At the global level, such deficits hinder international cooperation and exacerbate exploitation between nations. Thus, cultivating civic-mindedness among university students is not only a local or national necessity but also a global imperative.

Higher education institutions play a pivotal role in preparing students not only with academic knowledge but also with ethical values, civic responsibility, and professional integrity. In Thailand, the Ministry of Higher Education, Science, Research, and Innovation has emphasized the development of graduates who embody five core learning outcomes: moral and ethical awareness, knowledge, cognitive skills,

interpersonal and social responsibility, and information and communication technology literacy (Office of the Higher Education Commission, 2003). Universities are therefore tasked with integrating civic consciousness and moral development into curricula, co-curricular activities, and institutional missions. Northern College, a private higher education institution under the oversight of the ministry, explicitly identifies public-mindedness as part of its institutional identity, aligning with its mission to prepare graduates who are both competent and socially responsible. One of the most effective pedagogical approaches for cultivating civic values and public-mindedness is service-learning. Service-learning integrates academic instruction with meaningful community service, allowing students to apply theoretical knowledge in real-world contexts while simultaneously developing civic responsibility, empathy, and reflective thinking (Bringle & Hatcher, 1995; Eyler & Giles, 1999). Research has shown that service-learning fosters personal growth, enhances problem-solving skills, and increases student engagement with social issues (Astin, Vogelgesang, Ikeda, & Yee, 2000). By bridging the gap between classroom learning and community needs, service-learning provides a platform for experiential education that nurtures both academic and moral development. Complementing service-learning, community-based learning emphasizes active collaboration between students, faculty, and community stakeholders in addressing local issues. This approach engages students in participatory processes such as problem identification, resource mobilization, planning, and evaluation, thereby promoting a sense of shared responsibility and empowerment (Bender, 2008). Through sustained involvement with community partners, students not only acquire practical skills but also develop deeper cultural understanding and civic identity. For nursing and social science programs in particular, community-based learning has been identified as a transformative practice that fosters empathy, leadership, and public service orientation (Jacoby, 2009). Against this backdrop, the development of supplementary curricula tailored to public-mindedness becomes essential. While standard curricula focus primarily on disciplinary knowledge, supplementary curricula allow institutions to intentionally design learning experiences that emphasize civic engagement, ethics, and social responsibility. For Northern College, integrating service-learning and community-based learning into supplementary programs provides an innovative strategy to align academic outcomes with broader social missions. By doing so, the institution not only enhances students' academic and professional competencies but also strengthens their commitment to contributing positively to society.

Therefore, this study aims to develop supplementary curricula designed to foster public-mindedness among undergraduate students at Northern College through the dual pedagogical frameworks of service-learning and community-based learning. The research responds to national educational policy, institutional priorities, and global demands for socially responsible graduates. Ultimately, the study underscores the crucial role of higher education in balancing academic excellence with civic responsibility to produce graduates capable of contributing to sustainable social and national development.

Research Objectives

1. To develop supplementary curricula to foster public-mindedness through service-learning and community-based learning for undergraduate students at Tak Special Economic Zone Institute.
2. To compare the level of public-mindedness among students before and after participating in the supplementary curricula designed to foster public-mindedness through service-learning and community-based learning for undergraduate students at Tak Special Economic Zone Institute.

LITERATURE REVIEWS

Scholarship on civic and moral education converges on the idea that public-mindedness comprises interrelated behaviors, cognitions, and values oriented toward the common good. Syntheses of Thai educational thought (e.g., Chai, 1997; Sompong, 1999; Sirima, 2001; Nanthawat, 2003; Laddawan, 2006; Chaiwat, 2010; Kriengsak, 2013) consistently delineate five components with fifteen behavioral indicators: acting for public benefit, a cognitive orientation to collective interests, respect for shared resources, responsibility and duty, and compassion/solidarity. These components map onto widely used civic outcomes in higher education, including ethical reasoning, social responsibility, and prosocial engagement (Office of the Higher Education Commission [OHEC], 2003). A robust international literature identifies service-learning (SL) as an evidence-based pedagogy to cultivate such outcomes. Conceptually, SL integrates academic content with meaningful service that addresses authentic community needs, framed by preparation and critical reflection (Bringle & Hatcher, 1995; Eyler & Giles, 1999; Howard, 1993). Empirically, multi-institution studies show SL improves civic attitudes, problem-solving, and interpersonal skills (Astin et al., 2000), while meta-analyses report significant gains in academic performance and

citizenship outcomes (Celio et al., 2011; Yorio & Ye, 2012). Importantly, Sigmon's (1994) reciprocity principle "serving to learn and learning to serve" positions students and communities as co-beneficiaries, aligning with Thai perspectives that emphasize mutual responsibility and non-exploitation. Community-based learning (CBL) complements SL by foregrounding sustained participation with local stakeholders' families, civil society, and local government in co-defining problems, mobilizing resources, and evaluating impact (Bender, 2008; Jacoby, 2009). Thai scholars similarly stress voluntarism, shared decision-making, and a sense of ownership as conditions for durable community development (e.g., Wanichai, 2000; Parichat et al., 2000; Narong, 2002). Together, SL and CBL support a five-stage community service education cycle preparation and community exploration, project planning, implementation, evaluation, and reflection that links classroom learning to civic action in contextually responsive ways. Within curriculum studies, supplementary curricula provide a flexible vehicle to embed civic aims across programs through diverse content, experiential methods, and explicit outcomes for life skills and ethical dispositions (Piirto, 1994; McKown, 1992). For Thai higher education, national standards mandate graduate competencies in ethics, cognition, interpersonal responsibility, and ICT (OHEC, 2003), creating a policy rationale for structured enrichment that targets measurable public-mindedness indicators. Likert-type instruments have been widely used to assess such constructs and are suitable for pre-/post-comparisons tied to program participation (Eyler & Giles, 1999). In sum, theory and evidence suggest that supplementary curricula grounded in SL and CBL can systematically nurture the five components of public-mindedness while advancing academic and professional competencies. This study extends the literature by designing and evaluating such curricula for undergraduate students at the Tak Special Economic Zone Institute, situating global best practices within Thai cultural and policy contexts.

RESEARCH METHODOLOGY

This study employed a research and development (R&D) design (Borg & Gall, 1989) with three main phases: (1) investigation of foundational concepts and baseline data, (2) development and validation of the supplementary curricula, and (3) implementation and evaluation of curricular effectiveness. Phase 1: Analysis of Foundational Concepts, The first phase involved a comprehensive review of literature and related documents on public-mindedness, civic education, and service-learning models. Key theoretical inputs were synthesized from both Thai and international scholars to identify five essential components of public-mindedness—acting for public benefit, collective-oriented cognition, respect for shared resources, responsibility and duty, and compassion/solidarity. Semi-structured interviews with five experts including university administrators and student affairs leaders provided qualitative insights on current student civic challenges and institutional needs. The analysis established behavioral indicators to guide curriculum design. Phase 2: Curriculum Development, The second phase focused on designing the supplementary curricula through a systematic process. The structure included ten essential components: rationale and significance, foundational concepts, curriculum principles, objectives, learning outcomes, components of public-mindedness, curriculum structure, instructional activities, learning media, and evaluation. Draft curricula were subjected to expert review for content validity and relevance. Appropriateness was evaluated using a 5-point Likert scale, and the Item-Objective Congruence (IOC) index was calculated. Expert ratings yielded an overall IOC value of 0.98, surpassing the minimum threshold of 0.50 (Rovinelli & Hambleton, 1977). Revisions were incorporated based on expert feedback, and the final curriculum achieved a mean suitability rating of 4.51, interpreted as "highly appropriate." Phase 3: Implementation and Evaluation, The third phase assessed the effectiveness of the curricula through a quasi-experimental design. The population consisted of 3,298 undergraduate students enrolled in the first semester of the 2019 academic year. A stratified random sample of 24 students across faculties participated, along with 83 community stakeholders selected purposively for the community service projects. Research instruments included: (1) learning activity plans, (2) a public-mindedness scale (45 items, 5-point Likert), (3) a rubric-based performance assessment for community service projects, and (4) satisfaction questionnaires for both students and community participants. The public-mindedness scale underwent pilot testing with 40 students outside the sample. Item-total correlations ($r \geq .20$) were used for item selection, and Cronbach's alpha reliability was established at .85, indicating strong internal consistency (Nunnally & Bernstein, 1994). Data Analysis, Quantitative data were analyzed using descriptive statistics and paired-sample t-tests to compare students' public-mindedness scores before and after curriculum participation. Qualitative feedback from experts, students, and community members was thematically analyzed to triangulate findings and support curricular refinement.

RESEARCH RESULTS

The results of this study are presented in two main parts: (1) the development and appropriateness of the supplementary curricula to foster public-mindedness through service-learning (SL) and community-based learning (CBL), and (2) the outcomes of curriculum implementation among undergraduate students. Part 1: Development and Appropriateness of the Supplementary Curricula. The supplementary curricula were systematically developed to respond to the needs of both students and the institution. The design integrated two core pedagogical frameworks: service-learning and community-based learning. The curricula emphasized fostering five key components of public-mindedness: (1) performing actions that benefit the public, (2) cultivating collective-oriented cognition, (3) respecting shared resources, (4) fulfilling duties and responsibilities, and (5) nurturing compassion, generosity, and solidarity. Each component was operationalized through 15 behavioral indicators. The curriculum structure consisted of 30 instructional hours, divided into four main units: preparing for public-mindedness, planning community-based projects, engaging in service activities, and analyzing and reflecting on project outcomes. Learning activities followed a five-step process: readiness and community needs assessment, project preparation, project implementation, project analysis, and reflection with community acknowledgment. Instructional media included documents, audiovisual resources, and community-based settings, while evaluation comprised pretests, formative assessments during project work, and posttests. Ten experts in curriculum and pedagogy evaluated the appropriateness of the curricula using a five-point Likert scale. Results showed that the overall appropriateness of the curricula was rated at the highest level (Mean = 4.51, SD = 0.37). Among all elements, assessment and evaluation received the highest rating (M = 4.72, SD = 0.29), while learning outcomes received the lowest, though still at a high level (Mean = 4.45, SD = 0.25). Experts further suggested refinements regarding clarity, reference citation, and formatting. These recommendations were incorporated, resulting in a curriculum deemed both theoretically sound and practically feasible. Part 2: Outcomes of Curriculum Implementation. The quasi-experimental implementation involved 24 undergraduate students who participated in the supplementary curricula. Their levels of public-mindedness were measured before and after participation using a validated instrument with five subscales corresponding to the identified components. Results revealed that, prior to curriculum implementation, students' public-mindedness was at a moderate level overall (Mean = 2.65, SD = 0.19). After completing the curriculum, students demonstrated significant improvement, with overall public-mindedness rated at the highest level (Mean = 4.55, SD = 0.24). Across all five components, mean scores increased from moderate to high or highest levels. For example, the responsibility and duty component increased from Mean = 2.56 (SD = 0.31) to Mean = 4.57 (SD = 0.27), and the compassion/solidarity component rose from Mean = 2.57 (SD = 0.26) to Mean = 4.61 (SD = 0.25). Paired-sample t-test analyses confirmed that improvements across all five components were statistically significant at the .01 level. The largest gain was observed in responsibility and duty ($t = 41.620$, $p < .01$), followed by compassion/solidarity ($t = 35.250$, $p < .01$). These results indicate that the curriculum not only enhanced knowledge and attitudes but also effectively strengthened students' behavioral commitment to civic engagement. The findings demonstrate that the supplementary curricula, designed through the integration of SL and CBL, were highly appropriate according to expert review and effective in significantly improving public-mindedness among undergraduate students. The combination of structured community service, reflective practice, and active student participation proved instrumental in developing civic responsibility, respect for public resources, and a collaborative spirit essential for societal well-being and as shown Table 1 – Table 2.

Table 1: Experts' Evaluation of the Appropriateness of the Supplementary Curricula

Curriculum Component	Mean (M)	Standard Deviation (SD)	Appropriateness Level
Rationale and Significance	4.47	0.29	High
Foundational Concepts	4.46	0.39	High
Curriculum Principles	4.53	0.42	Highest
Curriculum Objectives	4.47	0.43	High
Learning Outcomes	4.45	0.25	High

Curriculum Component	Mean (M)	Standard Deviation (SD)	Appropriateness Level
Components of Public-Mindedness	4.46	0.59	High
Curriculum Structure	4.47	0.29	High
Learning Activities	4.50	0.50	High
Instructional Media	4.60	0.30	Highest
Assessment and Evaluation	4.72	0.29	Highest
Overall	4.51	0.37	Highest

Note. Scale: 4.51–5.00 = Highest, 3.51–4.50 = High, 2.51–3.50 = Moderate, 1.51–2.50 = Low, 1.00–1.50 = Lowest.

Table 2: Comparison of Undergraduate Students' Public-Mindedness Before and After Curriculum Implementation

Public-Mindedness Component	Pretest (M, SD)	Posttest (M, SD)	t-value	Sig. (1-tailed)
Action for Public Benefit	2.70 (0.29)	4.59 (0.33)	20.896**	.000
Collective-Oriented Cognition	2.72 (0.28)	4.49 (0.29)	10.427**	.000
Respect for Shared Resources	2.73 (0.28)	4.54 (0.31)	22.600**	.000
Responsibility and Duty	2.56 (0.31)	4.57 (0.27)	41.620**	.000
Compassion, Generosity, and Solidarity	2.57 (0.26)	4.61 (0.25)	35.250**	.000
Overall	2.65 (0.19)	4.55 (0.24)	29.978	.000

*Note. * $p < .01$ (two-tailed). Significant improvement observed across all components of public-mindedness.

DISCUSSION & CONCLUSION

The findings of this research indicate that the supplementary curricula developed through the integration of service-learning and community-based learning were both highly appropriate and effective in fostering public-mindedness among undergraduate students at the Tak Special Economic Zone Institute. Expert evaluation confirmed that the curriculum was highly appropriate, with a mean score of 4.51 (SD = 0.37). This reflects the strength of its rationale, principles, learning activities, and evaluation framework. Importantly, the empirical results revealed a marked improvement in students' public-mindedness after participation. Mean scores increased from a moderate level ($M = 2.65$, $SD = 0.19$) to the highest level ($M = 4.55$, $SD = 0.24$), with statistically significant gains across all five dimensions: action for public benefit, collective-oriented cognition, respect for shared resources, responsibility and duty, and compassion, generosity, and solidarity ($p < .01$). These findings affirm that curricula emphasizing experiential and community-oriented engagement can transform students' attitudes and dispositions. Sigmon (1994) argued that service-learning provides authentic opportunities for students to apply academic knowledge to community needs, thereby cultivating civic responsibility and empathy. The present study aligns with this argument, demonstrating that structured community engagement, when embedded within academic programs, effectively nurtures both civic awareness and social commitment. Similarly, Wade (1997) emphasized that service-learning fosters critical reflection and social responsibility, essential components of preparing students to be engaged citizens. The evidence from this study reinforces these perspectives, as students reported higher levels of responsibility and collective orientation after engaging in service- and community-based activities. The results also validate the importance of community-based learning as a pedagogical strategy. Narong (2002) emphasized that meaningful community participation allows students to perceive themselves as integral contributors to collective problem-solving processes, thereby

strengthening long-term sustainability in local development. In this research, students not only participated in community-based projects but also demonstrated deeper empathy, solidarity, and respect for communal resources. These outcomes mirror Seidel and Zlotkowski's (1998) assertion that community-based learning fosters stronger social bonds and a sense of shared responsibility, critical for counteracting the individualism and materialism prevalent in contemporary society. Importantly, the integration of service-learning and community-based learning proved particularly effective. Service-learning emphasizes reflection through civic engagement, allowing students to connect theoretical knowledge with lived community realities (Eyler & Giles, 1999). Community-based learning, by contrast, foregrounds participatory collaboration with local stakeholders, empowering students to co-create solutions with communities rather than imposing external models (Jacoby, 2015). Together, these approaches provided students with experiential opportunities that engaged both the cognitive and affective dimensions of learning. The success of this integrated model highlights its potential relevance to higher education institutions located in socio-economic transformation contexts, such as Thailand's special economic zones. From a policy and practice perspective, these findings carry several implications. First, higher education institutions should consider institutionalizing supplementary curricula that explicitly aim to foster public-mindedness as part of their long-term strategic missions. Universities play a critical role not only in producing skilled graduates but also in cultivating socially responsible citizens (Bringle & Hatcher, 2009). By embedding civic engagement within curricula, institutions can strengthen their societal impact and relevance. Second, curriculum developers and educators should integrate experiential and community-oriented learning into undergraduate programs, ensuring that academic learning is balanced with civic responsibility. Integrating these elements can help shift educational outcomes beyond technical competencies toward holistic character development (Astin, Vogelgesang, Ikeda, & Yee, 2000). Third, partnerships between universities and local communities must be strengthened to ensure that curricula respond to authentic community needs rather than being designed in isolation. Sustainable partnerships help students perceive their contributions as meaningful, while communities benefit from knowledge exchange and collaborative problem-solving (Mitchell, 2008). The study also underscores the need for greater attention to the affective dimensions of learning. Findings revealed significant increases in compassion, generosity, and solidarity dimensions often overlooked in higher education curricula, which traditionally emphasize cognitive outcomes. Developing affective qualities aligns with the framework of "whole-person education," which promotes the integration of emotional, social, and civic development alongside intellectual growth (Colby, Ehrlich, Beaumont, & Stephens, 2003). In the Thai context, where communal values and shared responsibility are culturally significant, fostering these affective qualities further strengthens the social role of higher education. Nevertheless, several limitations must be acknowledged. The study was conducted with a relatively small sample of 24 undergraduate students, which may limit the generalizability of results. Larger-scale studies across multiple institutions would provide more robust evidence of the effectiveness of integrated service- and community-based learning curricula. Furthermore, the cross-sectional design measured immediate post-intervention outcomes, leaving open the question of whether improvements in public-mindedness are sustained over time. Longitudinal research is necessary to examine whether these civic dispositions persist into students' professional and community lives after graduation. Additionally, the study focused on a specific socio-economic region in Thailand, which may possess unique cultural and institutional dynamics. Comparative research across different regions, universities, and cultural contexts could provide deeper insights into how these pedagogical approaches function across diverse educational systems. Future research should also explore mediating and moderating variables that influence the effectiveness of such curricula. For instance, factors such as prior community experience, family background, and institutional support may shape how students engage with and benefit from service- and community-based learning. Mixed-methods designs combining quantitative surveys with qualitative interviews or reflective journals could provide richer insights into students' learning processes and experiences. By capturing both measurable outcomes and lived narratives, researchers can better understand the mechanisms through which public-mindedness develops. In conclusion, this research provides compelling evidence that supplementary curricula grounded in service-learning and community-based learning effectively cultivate public-mindedness among undergraduate students. The integration of these pedagogical frameworks not only improved students' awareness, responsibility, and solidarity but also strengthened relationships between academic institutions and local communities. These outcomes underscore the role of higher education as a catalyst for nurturing socially responsible graduates who can contribute meaningfully to sustainable national and local development. By institutionalizing such integrated

curricula, universities can simultaneously advance academic excellence and social responsibility, ensuring that graduates are equipped to meet both professional and civic challenges in an increasingly interconnected world.

Recommendations

1. Practical Recommendations

Based on the findings of this research, several practical recommendations can be drawn for higher education institutions, educators, and policymakers to strengthen the integration of service-learning and community-based learning in ways that cultivate public-mindedness among undergraduate students. These recommendations emphasize institutional integration, pedagogical strategies, sustainable partnerships, and resource support, each of which plays a critical role in ensuring the long-term success of such initiatives. First, universities should formally embed supplementary curricula that emphasize service-learning and community-based learning into undergraduate education. This integration must go beyond viewing service-learning as an optional co-curricular activity or short-term project. Instead, institutions should systematically institutionalize experiential and community-oriented learning within program structures, course syllabi, and learning outcomes. When civic responsibility, empathy, and respect for shared resources are embedded into university missions, they become an integral part of institutional identity and culture. Such integration not only enhances students' academic and personal development but also ensures that graduates are prepared to act as both competent professionals and socially responsible citizens. In contexts such as special economic zones, where rapid socio-economic changes create opportunities and challenges, producing graduates who can balance technical expertise with civic awareness is especially critical. Second, faculty members should adopt participatory and experiential teaching strategies that connect students with real community issues. Evidence from this study shows that when students engage in authentic community-based projects, they develop deeper empathy, solidarity, and responsibility. Faculty can reinforce these outcomes by incorporating structured reflection activities into the curriculum. Guided discussions, reflective journals, and group debriefings provide opportunities for students to critically analyze their experiences, examine ethical and social implications, and integrate lessons into long-term attitudes and behaviors. Faculty development programs should therefore prioritize training on service-learning course design, equipping educators with skills to balance academic rigor with civic learning outcomes. Such preparation ensures that pedagogical approaches remain innovative, context-sensitive, and student-centered. Third, universities should strengthen collaboration with local communities, government agencies, and civil society organizations. Effective service-learning and community-based learning rely on reciprocity: students gain educational value, while communities benefit from projects that address authentic needs. Building sustainable partnerships grounded in mutual respect and shared goals helps avoid externally imposed projects that lack community relevance. Instead, co-created initiatives ensure that both students and communities experience genuine benefits. In rapidly changing areas such as special economic zones, universities can also act as mediators, aligning economic growth with cultural and social sustainability. Strengthened partnerships not only enhance learning but also build long-term trust between academic institutions and communities. Fourth, institutional administrators should allocate sufficient resources to sustain these initiatives. Financial investment, logistical support, and faculty incentives are all essential to program success. Funding should be directed toward transportation, collaborative project resources, and stipends for faculty who design and implement service-learning programs. Equally important is the establishment of recognition systems. Faculty who successfully integrate service-learning into teaching should receive acknowledgment in promotion and evaluation processes, while students should be rewarded through academic credits, certificates, or public recognition. These mechanisms reinforce the value of participation and help embed service-learning into institutional culture. Finally, universities should adopt systematic monitoring and evaluation mechanisms. Comprehensive assessment frameworks can track both student outcomes and community impact. Data from these evaluations provide feedback for curriculum refinement, enhance accountability, and demonstrate tangible benefits to stakeholders. Importantly, assessments should include both quantitative measures, such as improvements in public-mindedness scores, and qualitative inputs, including feedback from students, faculty, and community partners. Such holistic evaluation ensures that service-learning and community-based learning remain relevant, effective, and sustainable. In conclusion, implementing these recommendations requires coordinated efforts among universities, faculty, administrators, and policymakers. By embedding service-learning into institutional missions, adopting participatory pedagogical approaches, cultivating sustainable partnerships, providing adequate resources, and establishing evaluation systems, higher

education institutions can prepare graduates who are socially responsible and capable of addressing both local and global challenges. The integration of these strategies reflects not only an educational innovation but also a broader social responsibility: ensuring that higher education contributes to a more just, empathetic, and sustainable society.

2. Recommendations for Future Research

Although this study demonstrated the effectiveness of the supplementary curricula in enhancing students' public-mindedness through the integration of service-learning and community-based learning, several avenues remain for further investigation. Future research should adopt more comprehensive designs that broaden the sample size, incorporate longitudinal methods, and include multiple stakeholders in order to build a stronger evidence base for both theory and practice. First, larger-scale studies should be conducted across multiple institutions with more diverse student populations. The present study was limited to a relatively small cohort within a single institution located in the Tak Special Economic Zone. While the results were promising, the limited sample restricts generalizability. By including universities in both urban and rural contexts, future research could better capture how socio-economic, cultural, and institutional differences shape the development of public-mindedness. Comparative studies between metropolitan institutions with greater access to resources and rural institutions with closer ties to local communities would provide valuable insights into the contextual factors influencing program effectiveness. Second, longitudinal research is needed to examine whether the observed improvements in public-mindedness are sustained beyond the immediate program. Cross-sectional findings, while useful, cannot determine whether gains persist after graduation. Following cohorts of students over several years would allow researchers to evaluate how the values and competencies cultivated during undergraduate studies translate into civic engagement, ethical leadership, and social responsibility in adulthood. Such research could also explore how graduates apply service-learning and community-based learning experiences in their professional roles, personal relationships, and community involvement. Third, future research should focus more explicitly on the perspectives of community stakeholders. While community members participated in the projects examined here, their voices were not central to the analysis. Deeper inquiry into community perceptions would help clarify how residents evaluate the benefits and challenges of student engagement, and how these collaborations affect local development goals. Co-created curricula designed with equal input from students, educators, and community stakeholders could ensure that such programs achieve mutual benefit rather than privileging academic outcomes alone. Finally, interdisciplinary studies could provide richer insights into the mechanisms through which service-learning and community-based learning influence student development. Combining perspectives from education, psychology, and social development would help explain how experiential learning shapes not only attitudes but also behaviors and civic identity formation. Integrating theories of moral development, social capital, and transformative learning could further illuminate why certain program elements are particularly effective. By pursuing these directions, future research can refine the integration of service-learning and community-based learning in higher education. Such work would contribute not only to academic achievement but also to the cultivation of socially responsible graduates prepared to advance sustainable development in Thai society and beyond.

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