

# Evaluating the Impact of Social Entrepreneurship Education on Secondary School Students in Hong Kong

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## **Abstract:**

This study evaluates the impact of Social Entrepreneurship Education (SEE) on the holistic development of secondary school students in Hong Kong, with particular attention to community-based learning and student engagement. Using a convergent parallel mixed-methods design, the research involved 78 Secondary 4 students participating in a school-based SEE program. Twenty students were classified as Active Participants who received mentoring and deeper involvement in project design, while 58 participated primarily in core workshops. Quantitative analysis examined six developmental domains: learning and cognitive development, personal growth and self-awareness, collaboration and communication, community awareness and civic engagement, entrepreneurial mindset, and future planning. Active participants reported consistently higher mean scores across all domains, although differences were not statistically significant. Pearson correlations revealed strong relationships among domains, suggesting an integrated construct of student competence. Qualitative findings indicated meaningful gains in resilience, empathy, collaboration, civic responsibility, and reflective thinking. The findings highlight the potential of community-engaged SEE to support holistic student development within academically intensive education systems.

**Keywords:** *Social Entrepreneurship Education; Experiential Learning; Community Learning; Secondary Education; Civic Responsibility; Entrepreneurial Mindset; 21st Century Competencies*

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## **Introduction**

Social entrepreneurship education (SEE) has gained increasing attention as a transformative pedagogical strategy that equips students not only with entrepreneurial competencies but also with a stronger sense of civic purpose and innovation. SEE has been described as fostering “the capacity to identify opportunities for social value creation” while enhancing self-agency and practical problem-solving abilities (Mair & Noboa, 2006). In Hong Kong, where academic achievement is often overemphasized, youth may lose their sense of imagination, identity, and life purpose under societal pressure (Tse, 2024). In response, the Curriculum Development Council (2017) advocates the cultivation of an entrepreneurial spirit through cross-curricular and life-wide learning experiences. Through collaboration across Key Learning Areas, schools can design life-wide activities that not only extend learning beyond the classroom but also help students clarify their values, develop empathy, and engage meaningfully with their communities.

Building on this vision, several schools in Hong Kong have begun to take pioneering steps in integrating SEE into the formal curriculum. Echoing this policy direction, over the past two years, two cohorts of Secondary 4 students from a Hong Kong secondary school participated in a structured Social Entrepreneurship Workshop embedded in the school’s Value Education and Experiential Learning Curriculum. This initiative enabled students to investigate community issues, generate socially innovative solutions, and present practical prototypes for potential implementation. The program adopted a two-tier participation model: while all students engaged in the foundational workshops, a subset received more intensive mentoring, formal presentation opportunities, and participation in external competitions. This structure provided a valuable opportunity to examine how different levels of engagement were associated with variations in students’ developmental outcomes. This school-based initiative thus operationalizes policy directions at the classroom level, offering a concrete opportunity to examine how different forms of participation shape students’ developmental outcomes.

This study therefore seeks to answer two research questions: (1) How is participation in SEE associated with students’ developmental outcomes? (2) How do these outcomes differ between students with intensive versus foundational engagement? By situating these questions in the Hong Kong context, the study not only contributes to local policy discussions but also connects to wider international debates about how education systems balance academic rigor with creativity, civic engagement, and ethical responsibility. Globally, many education systems face similar challenges in preparing young people for uncertain futures while equipping them with both entrepreneurial and civic capacities. Hence, findings from Hong Kong, a high-pressure system with a strong exam culture, offer lessons for comparable contexts worldwide, particularly in societies where academic achievement tends to overshadow broader aspects of student development.

While SEE has been extensively examined in higher education and Western contexts (Bacq & Alt, 2018), a significant empirical gap exists regarding its implementation in secondary education within East Asia, particularly in high-pressure systems like Hong Kong. Current research predominantly focuses on entrepreneurship education's influence on knowledge and business skills (Fayolle & Gailly, 2008), while its broader developmental impacts, such as identity formation, civic consciousness, and long-term planning, remain underexplored. Emerging evidence suggests SEE fosters moral imagination, described as "the ability to recognize ethical dimensions in complex real-life situations and envision morally responsible alternatives" (Nicholls, 2006), while also enhancing youth confidence and civic responsibility (Hockerts, 2018). However, research linking the degree of program participation to student outcomes remains scarce, despite the widely recognized importance of active and experiential learning.

Against this backdrop, this study investigates a structured SEE program implemented with two consecutive Secondary 4 cohorts in a Hong Kong school. Aligned with the Curriculum Development Council's (2017) call for cross-curricular, life-wide learning, the program engaged students in workshops, mentoring, prototyping, and external competitions to promote values-oriented entrepreneurial learning. It evaluates outcomes across six domains: (1) learning and cognitive development, (2) personal growth and self-awareness, (3) collaboration and communication, (4) community awareness and civic engagement, (5) entrepreneurial mindset and competency, and (6) future planning and career aspirations. By comparing actively engaged students (receiving intensive mentoring and external opportunities) with those participating at a foundational level, the study examines how differences in engagement intensity relate to developmental trajectories. Situated in Hong Kong's exam-driven context, it provides an internationally relevant case for embedding SEE within formal schooling to support both business-oriented outcomes and students' civic and ethical development. This model offers insights for reforming other high-pressure systems seeking to balance skills development with civic identity formation.

## Literature Review

Entrepreneurship education (EE) has long been recognized as a vital element in preparing students for both life and work. Research consistently demonstrates its positive influence on students' attitudes toward entrepreneurship and their intentions to pursue business ventures (Mohan-Neill, 2001; Kolvereid & Moen, 1997). Beyond business start-up skills, EE also supports the development of a wide range of personal and social competencies—creativity, problem-solving, communication, and self-empowerment. As Danko (2005) argues, EE enables young people to clarify their values, build resilience, and adapt to changing social and economic environments.

At the policy level, the role of EE has become increasingly prominent. The World Economic Forum emphasizes that entrepreneurship education should be integrated into the core structure of education systems rather than remaining a peripheral component. EE and entrepreneurial skills are seen as essential for fostering socially inclusive and competitive economies. The report calls on governments and institutions to adopt sustainable, context-relevant practices, with clear objectives and measurable outcomes to ensure lasting impact (Wilson et al., 2009). Similarly, the Hong Kong Secondary Education Curriculum Guide (Curriculum Development Council, 2017) highlights that the cultivation of an entrepreneurial spirit is not confined to the pursuit of business ventures. Instead, it extends to developing knowledge, generic skills, and positive values that underpin students' personal growth and future pursuits, whether they become entrepreneurs, freelancers, or innovators.

The Hong Kong context provides further evidence of the role of EE in supporting both academic learning and lifelong competencies. Empirical studies have demonstrated its potential to equip secondary school students with work-related knowledge and transferable skills essential for future employability. Integrating entrepreneurship activities into business subjects has been found to enhance classroom engagement and cultivate a positive learning atmosphere, while students have also perceived the entrepreneurial knowledge they acquired as practically valuable for their future development (Cheung & Ng, 2010; Cheung & Chan, 2011). In Hong Kong, experiential opportunities such as school-organized business simulations and student-run market stalls provide authentic contexts for applying entrepreneurial knowledge and skills. These experiences not only deepen students' practical understanding of business operations but also strengthen their entrepreneurial intentions, with more participants expressing interest in starting their own ventures (Cheung & Au, 2010). As Hong Kong society continues to evolve rapidly, the education system must adapt accordingly to provide learning experiences that extend beyond traditional classroom boundaries (Cheung, 2012). Despite the limited presence of entrepreneurship within the formal secondary school curriculum, both private and public organizations have played pivotal roles in advancing EE by providing seed capital, first-hand business experiences, and up-to-date industry insights, thereby bridging the gap between academic instruction and real-world practice (Cheung, 2016).

While EE provides a strong foundation, SEE represents a further development of this concept. Seelos and Mair (2005) define social entrepreneurship as "the process of creating value by bringing together a unique

package of resources to exploit an opportunity” directed at solving social problems. This dual orientation—combining business acumen with social responsibility—has increasingly positioned SEE as a key educational tool for fostering 21st-century competencies such as innovation, resilience, empathy, and ethical reasoning (Kickul & Lyons, 2012). Scholars have highlighted the transformative potential of SEE: Fayolle and Gailly (2008) argue that it cultivates higher-order thinking skills such as critical analysis and opportunity recognition, while Nicholls (2006) emphasizes its role in developing “moral imagination,” enabling learners to navigate ethical dilemmas through empathy and creativity. In youth contexts, Hockerts (2018) found that early exposure to SEE enhances students’ confidence, motivation, and commitment to societal betterment, suggesting that its impact extends beyond economic participation to civic engagement and moral responsibility.

Social entrepreneurship, as distinct from traditional entrepreneurship, is characterized by its focus on social value creation (Mair & Marti, 2006; Dato-on & Kalakay, 2016). Unlike profit-oriented ventures, social entrepreneurship prioritizes community impact and adopts interdisciplinary approaches that integrate insights from sociology, organizational theory, and economics. It pursues a “double bottom line” of financial sustainability and social value, demanding ethical decision-making and robust methodologies to align educational goals with social outcomes (O’Connor, 2013). Accordingly, SEE is increasingly recognized for nurturing the mindset and competencies required to generate innovative solutions to social and environmental challenges (Voronkova et al., 2019; Garcia-González & Ramírez-Montoya, 2021). Its integration into curricula and global initiatives such as Ashoka reflects this momentum, embedding civic identity within entrepreneurial learning. Recent research has further stressed the need to identify key competencies and refine pedagogical practices (Abebe et al., 2020), while emerging classification frameworks aim to consolidate fragmented research and foster international collaboration—advancing SEE theory and practice through a comprehensive taxonomy (Al Issa et al., 2024). As Snyder (2019) reminds us, such systematic syntheses are essential for guiding the future direction of this evolving field. However, SEE faces challenges due to unclear frameworks, limited long-term evidence, and the risk of emphasizing individual success or visibility over genuine social impact, which highlights the need for more coherent and context-sensitive approaches (Rideout & Gray, 2013; Karatas-Özkan et al., 2023; Banha, Coelho & Flores, 2022).

In Hong Kong, the structured curriculum often limits attention to value-based education, meaning students’ personal and civic development may be overshadowed by academic performance. SEE offers a potential remedy by cultivating civic identity and providing experiential learning opportunities. A notable example is the “Social Entrepreneurship and School Education Program,” organized by The Chinese University of Hong Kong and the Fullness Social Enterprises Society since 2014. The program positions social entrepreneurship as a vehicle for life and spiritual education, aiming to explore its transformative impact on youth and propose a referential framework for student development (Tse, 2024). Research in Hong Kong shows that SEE can support disadvantaged youth by promoting self-worth, resilience, and career competence (Tam et al., 2021). This study further indicates that using social entrepreneurship as an intervention enhances young people’s sense of self-worth, employability, and entrepreneurial knowledge and skills. Introducing similar programs earlier at the secondary level could be particularly valuable for disadvantaged students, providing them with experiential learning, practical problem-solving skills, and pathways for social inclusion and meaningful community engagement.

Recent evidence highlights that community-based experiential learning serves as a bridge between entrepreneurial learning and civic identity development, illustrating several key principles of SEE. Community-friendly learning activities significantly strengthen students’ sense of community and willingness to serve. Through these activities, students develop belonging and social responsibility while forming meaningful connections that foster empathy, social understanding, and civic confidence, motivating them to contribute positively to their communities. These experiences cultivate a shared emotional connection and reinforce students’ integration and influence within their communities, laying the foundation for social capital and sustained civic engagement. By embedding students in real-world community contexts, these experiential activities reflect the “double bottom line” of SEE, helping learners identify social needs, co-create solutions, and evaluate their social impact, thereby linking entrepreneurial skills with civic and ethical development (McMillan & Chavis, 1986; Youniss, McLellan & Yates, 1997; Pretty et al., 2002; Albanesi, Cicognani & Zani, 2007; Lau, 2024). Recent evidence highlights that community-based experiential learning serves as a bridge between entrepreneurial learning and civic identity development, illustrating key principles of SEE. Community-friendly learning activities significantly strengthen students’ sense of community and willingness to serve. Through these activities, students develop belonging and social responsibility while forming meaningful connections that foster empathy, social understanding, and civic confidence, motivating them to contribute positively to their communities. These experiences cultivate a shared emotional connection and reinforce students’ integration and influence within their communities, laying the foundation for social capital and sustained civic engagement. By embedding students in real-world community contexts, these experiential activities reflect the “double bottom line” of SEE, helping learners identify social needs, co-create solutions, and evaluate their social impact, thereby

linking entrepreneurial skills with civic and ethical development (McMillan & Chavis, 1986; Youniss, McLellan & Yates, 1997; Pretty et al., 2002; Albanesi, Cicognani & Zani, 2007; Lau, 2024).

This experiential dimension carries important implications for SEE. By linking entrepreneurial competence with civic engagement and identity formation, community-based experiential learning demonstrates how SEE can transcend traditional business-oriented outcomes to nurture socially responsible and community-minded learners. Such practices operationalize the “double bottom line” of SEE—achieving both economic and social value—by engaging students in authentic contexts where they identify needs, co-create solutions, and reflect on their social impact (Lau, 2024; O’Connor, 2013). This aligns with Seelos and Mair’s (2005) conceptualization of social entrepreneurship as creating value to address social problems and with Nicholls’ (2006) notion of “moral imagination,” which enables learners to approach ethical challenges through empathy and creativity. Consequently, SEE not only cultivates entrepreneurial mindsets but also fosters empathy, moral reasoning, and civic responsibility (Kickul & Lyons, 2012; Hockerts, 2018). When integrated into secondary education, such experiential and community-oriented approaches enable students to internalize social values through action—bridging learning and living (Lau, 2024)—and strengthening civic identity, social inclusion, and lifelong engagement with community well-being (Fayolle & Gailly, 2008; Voronkova et al., 2019; García-González & Ramírez-Montoya, 2021).

Table 1: Developmental Outcomes of Social Entrepreneurship Education

Developmental Domain	Key Outcomes of SEE
1. Learning & Cognitive Development	<ul style="list-style-type: none"> <li>• Develops higher-order thinking skills in social problem-solving contexts.</li> <li>• Enhances practical, work-related knowledge through social ventures.</li> <li>• Deepens understanding of the social impact of business operations.</li> </ul>
2. Personal Growth & Self-Awareness	<ul style="list-style-type: none"> <li>• Builds resilience, adaptability, and perseverance in addressing social challenges.</li> <li>• Clarifies personal values and ethical perspectives.</li> <li>• Enhances self-worth, self-empowerment, and confidence.</li> <li>• Improves motivation and commitment to social impact.</li> </ul>
3. Collaboration & Communication Skills	<ul style="list-style-type: none"> <li>• Strengthens teamwork and co-creation of social solutions.</li> <li>• Develops communication, negotiation, and stakeholder engagement skills in real social contexts.</li> </ul>
4. Community Awareness & Civic Engagement	<ul style="list-style-type: none"> <li>• Cultivates empathy, social responsibility, and moral imagination.</li> <li>• Strengthens sense of community, belonging, and civic confidence.</li> <li>• Motivates positive contribution to society and sustained civic engagement.</li> </ul>
5. Entrepreneurial Mindset & Competency	<ul style="list-style-type: none"> <li>• Fosters creativity, innovation, and problem-solving to address social issues.</li> <li>• Strengthens social entrepreneurial intentions and interest in starting social ventures.</li> <li>• Encourages ethical decision-making for a “double bottom line”.</li> </ul>
6. Future Planning & Career Aspirations	<ul style="list-style-type: none"> <li>• Enhances future employability and career competence in socially-oriented roles.</li> <li>• Provides pathways for social inclusion and community engagement.</li> <li>• Supports long-term planning as social entrepreneurs, innovators, or civic leaders.</li> </ul>

### Research Methods

This study adopted a convergent parallel mixed-methods design, meaning that quantitative and qualitative data were collected at the same time, analyzed separately, and then compared for convergence (Creswell & Plano Clark, 2018). By collecting and analyzing different types of data concurrently, the study was able to triangulate findings and capture not only measurable developmental outcomes but also the nuanced experiences of student engagement and instructional design.

The intervention examined was a Social Entrepreneurship Education (SEE) program implemented as part of the school’s value education curriculum. The program was initially introduced through a collaboration between The Chinese University of Hong Kong and the Fullness Social Enterprises Society, and was mainly facilitated by the Fullness Social Enterprises Society with support from teachers. It consisted of around 10 sessions. The

program focused on helping students explore social issues such as youth development, ageing, and the Sustainable Development Goals (SDGs) through experiential and community-based learning. A central feature of the program was students' direct interaction with community partners. For example, students took part in SDGs simulation activities and empathy workshops that encouraged them to consider different perspectives. They also participated in a "Human Library" activity, where community members were invited to share their experiences, and students conducted interviews to better understand real-life needs. In addition, social enterprises such as Silver Yoga were invited to lead experiential sessions. In these sessions, elderly instructors guided students through simple yoga activities, allowing for direct interaction across generations. Students were also provided with soft meals designed for elderly individuals to taste, helping them experience some of the dietary needs associated with ageing. Together, these activities gave students a more concrete understanding of the challenges faced by older adults. These opportunities allowed community partners to play an active role in supporting student learning, particularly in fostering empathy and problem-solving skills. Students also worked in groups to explore social issues, develop ideas, and present their proposals. These ideas were refined through feedback from teachers and facilitators, and in some cases presented to a wider audience at the end of the program.

The study adhered to ethical guidelines for school-based educational research in Hong Kong. As it involved curriculum-based activities within normal educational practice and posed minimal risk, formal institutional ethical approval was not required. Permission was obtained from the school administration, and all procedures followed the principles of confidentiality, voluntary participation, and informed consent in accordance with the Declaration of Helsinki (World Medical Association, 2013). Participants were 78 Secondary 4 students (aged approximately 15–16 years). While all students took part in the program, they were categorized post hoc into two groups based on engagement level. Active Participants (AP,  $n = 20$ ) received additional mentoring, worked closely with facilitators, presented their social innovation ideas at a year-end showcase, and participated in external social entrepreneurship competitions. Less Active Participants (LAP,  $n = 58$ ) engaged only in regular program activities, including simulation games, idea generation, and classroom-level presentations. This classification allowed for a comparative analysis of how varying levels of participation influenced developmental outcomes. In line with common practice in Hong Kong, school-based educational research that involves minimal risk and routine teaching activities may be exempt from formal institutional ethical review.

It collected quantitative and qualitative data concurrently. For the quantitative component, we administered a standardized post-program survey using a 5-point Likert scale to capture students' self-reported development across six domains. The survey items were adapted from established SEE evaluation frameworks (Hockerts, 2018; Bacq & Alt, 2018). For the qualitative component, we gathered students' reflective writings, anonymous feedback forms, and semi-structured interview data. We conducted interviews with five tutors or teachers involved in the program and five students who participated at different levels of engagement. These interviews explored the workshop's pedagogical design, instructional challenges, and participants' learning experiences. Tutors and teachers reflected on instructional strategies, observed student behaviors, and factors influencing engagement, while students shared their perspectives on learning, motivation, and perceived social impact. Each interview lasted approximately 20 minutes and was transcribed verbatim for thematic analysis.

Descriptive statistics were first used to calculate mean scores for the overall sample as well as for the two subgroups. To examine whether statistically significant differences existed between active and less active participants, a one-way analysis of variance (ANOVA) was conducted. This inferential technique is well-suited for comparing group means and is commonly applied in educational research to assess the impact of interventions (Field, 2018). ANOVA results are reported using F-statistics, p-values, and effect sizes ( $\eta^2$ ), following Field's guidelines. For transparency, a summary table in the Results section presents all statistical outcomes, including means, standard deviations, and significance levels. Additionally, differences in standard deviations were examined to highlight variability in students' developmental outcomes across groups. As a non-parametric complement, the Mann-Whitney U-test was employed to account for potential violations of normality assumptions. Additionally, Pearson correlation analysis was conducted to assess the relationships among the six developmental domains, following conventional thresholds for interpreting correlation coefficients (Cohen, 1988). These procedures ensured that the analysis adhered to established methodological standards for evaluating program impacts on student development.

It analyzed qualitative data using Braun and Clarke's (2019) six-phase framework for reflexive thematic analysis: (1) familiarization with the data, (2) generating initial codes, (3) searching for themes, (4) reviewing themes, (5) defining and naming themes, and (6) producing the report. An inductive approach was employed, allowing themes to emerge naturally from participants' narratives. The researcher independently coded the transcripts, and intercoder reliability was established; any discrepancies were resolved through discussion until consensus was reached. The resulting themes were then integrated with quantitative findings to ensure that statistical trends were supported by narrative evidence. Including multiple perspectives from tutors, teachers, and students further enhanced the validity and contextual richness of the results. Together, these findings provided a

multidimensional understanding of how engagement intensity in SEE influences student development and community-oriented learning.

## Result and Discussion

### 1. Quantitative Findings

The data in Table 2 illustrate that students who participated in SEE reported broadly positive and multidimensional developmental outcomes. Across all domains, active participants consistently report higher mean scores than less active participants, suggesting an association between depth of engagement and reported developmental outcomes. The standard deviations (S.D.) also reveal how unevenly students experienced the program, suggesting that individual differences shaped the depth of learning. Notably, active participants generally show slightly higher S.D.s, particularly in Community Awareness and Civic Engagement (S.D. = 1.79), which may reflect differences in the types and intensity of community involvement, as well as individual responsiveness to social experiences. In contrast, less active participants tend to exhibit lower variability, indicating a more uniform, albeit lower, level of impact.

Table 2: Scale of the impacts on SEE on students

	General		Active Participants		Less Active Participants		Mean Diff.
	Mean	S.D.	Mean	S.D.	Mean	S.D.	
Learning and Thinking Development (L&CD)	3.33	1.06	3.56	1.19	3.25	1.01	0.31
Personal Growth and Self-awareness (PG&S)	3.29	1.05	3.45	1.20	3.19	0.95	0.26
Collaboration and Communication (C&C)	3.35	1.03	3.50	1.17	3.30	0.97	0.20
Community Awareness and Engagement (CA&E)	3.28	1.05	3.51	1.79	3.20	0.98	0.31
Entrepreneurial Mindset and Competency (EM&C)	3.30	1.03	3.57	1.14	3.21	0.97	0.36
Future Planning and Career Inspiration (FP&CI)	3.27	1.03	3.54	1.14	3.18	0.97	0.36

Active Participants (AP) consistently reported higher mean scores across all six developmental domains compared to Less Active Participants (LAP), reinforcing the positive association between depth of engagement and perceived learning outcomes. In Learning and Cognitive Development (L&CD), AP students (M = 3.56, SD = 1.19) demonstrated a notable advantage over LAP students (M = 3.25, SD = 1.01), reflecting stronger self-reported gains in understanding socio-economic concepts, foundational social entrepreneurship knowledge, project design, and planning abilities.

For Personal Growth and Self-Awareness (PG&S), AP participants (M = 3.45, SD = 1.20) again surpassed LAP participants (M = 3.19, SD = 0.95), particularly in areas such as problem-solving confidence and adaptive thinking when facing challenges. Similarly, in Collaboration and Communication Skills (C&C), AP students (M = 3.50, SD = 1.17) outperformed their LAP counterparts (M = 3.30, SD = 0.97), with marked improvements in accepting constructive feedback and navigating group consensus.

Community Awareness and Civic Engagement (CA&E) exhibited one of the most substantial group differences, with AP students (M = 3.51, SD = 1.79) reporting significantly higher scores than LAP students (M = 3.20, SD = 0.98). This domain reflected stronger recognition of community needs and a heightened belief in the role of youth in driving social change. The greatest divergence, however, emerged in Entrepreneurial Mindset and Competency (EM&C), where AP participants (M = 3.57, SD = 1.14) substantially exceeded LAP participants (M = 3.21, SD = 0.97), indicating stronger pioneering spirit, multi-perspective thinking, and resilience in learning from setbacks.

Finally, in Future Planning and Career Aspirations (FP&C), AP students (M = 3.54, SD = 1.14) demonstrated clearer goal orientation and career reflection compared to LAP students (M = 3.18, SD = 0.97), suggesting that experiential engagement supported more intentional and socially-aware future planning. Across domains, while mean differences did not reach statistical significance, the consistent trend underscores the potential of intensive, hands-on participation in fostering holistic student development within social entrepreneurship education.

Overall, the general mean score across domains ( $M \approx 3.33$ ) indicates moderately positive outcomes from SEE participation. The consistently higher scores among active participants highlight the value of sustained engagement. These findings suggest that SEE’s benefits are amplified through active participation—particularly in creativity, critical thinking, and community interaction—supporting the adoption of participatory, community-based learning to maximize SEE’s developmental impact.

Table 3: Statistical Analysis of SEE Impacts on Students’ Development Domains

	U statistic	p-value (U-test)	F value	p-value (ANOVA)
L&CD	495.5	0.323	1.358	0.247
PG&S	530.5	0.565	0.896	0.347
C&C	534.5	0.595	0.555	0.459
CA&E	505.5	0.382	1.433	0.235
EM&C	490.0	0.291	1.902	0.172
FP&C	470.0	0.192	2.003	0.161

Table 3 presents the statistical analysis of SEE impacts on students’ development domains. Despite observable numerical differences between groups, the results of both the parametric One-Way ANOVA (F-test) and the non-parametric Mann–Whitney U-test indicate that none of the differences reached statistical significance at the 0.05 level (see Table 3). The F values were relatively low, ranging from 0.555 for Collaboration and Communication to 2.003 for Future Planning and Career Inspiration, with all corresponding p-values exceeding 0.05. Similarly, the Mann–Whitney U-test results were also non-significant across all domains. These findings suggest that although Active Participants demonstrated slightly higher mean scores, there is insufficient statistical evidence to confirm meaningful differences between the two groups.

Table 4: Pearson Correlations between Key Student Development Domains

	L&CD	PG&S	C&C	CA&E	EM&C	FP&C
<i>L&amp;CD</i>	1.000					
PG&S	0.962	1.000				
C&C	0.931	0.931	1.000			
CA&E	0.942	0.955	0.946	1.000		
EM&C	0.958	0.956	0.950	0.978	1.000	
FP&C	0.932	0.929	0.934	0.975	0.975	1.000

Table 4 further illustrates the Pearson correlation coefficients among the six student development domains. As shown in Table 4, all domains are highly and positively correlated ( $r = 0.929\text{--}0.978$ ,  $p < 0.001$ ), indicating strong interrelationships. The strongest correlation was observed between Community Awareness and Engagement and Entrepreneurial Mindset and Competency ( $r = 0.978$ ), while the weakest—though still very strong—was between Personal Growth and Self-awareness and Future Planning and Career Inspiration ( $r = 0.929$ ). The consistently high correlations suggest that these domains may not represent entirely distinct constructs but instead reflect a shared underlying dimension of overall student competence. This raises concerns about discriminant validity, as the instrument appears to measure a general latent factor rather than six clearly separable domains. Therefore, further analysis, such as factor analysis, is recommended to examine the dimensionality of the instrument and support refinement for improved construct validity.

## 2. Qualitative Findings

### 2.1 Learning and Cognitive Development

Teachers observed a notable change in students’ curiosity and depth of understanding through the SEE program. One teacher remarked, “Students began to think critically rather than just repeat textbook ideas—they started questioning why problems exist and how they could apply what they learned to solve them.” The program tutor emphasized that the SEE curriculum, grounded in Design Thinking and Experiential Learning, helped students connect theory with practice: “Students not only learned to care about social issues but also developed empathy and the ability to design their own innovative projects.” These experiences encouraged students to move beyond memorization and develop stronger analytical and practical problem-solving skills.

## 2.2 Personal Growth and Self-Awareness

Students reported significant personal growth, particularly in resilience and reflective capacity. One student shared, “When our plan failed the first time, I felt upset. But our teacher reminded us that failure is part of learning. I realized I could start again, but smarter.” The program tutor also pointed out that hands-on experiences helped strengthen empathy, confidence, and reflection: “Students were more engaged when they could experience things themselves,” recalling an elderly yoga workshop where students were surprised that “the elderly could perform chair yoga—even better than them—which encouraged students to reflect on their own abilities and attitudes.” Such experiences helped develop humility, empathy, and a deeper awareness of human capability.

## 2.3 Collaboration and Communication Skills

Teachers noted that students became more mature in teamwork and more open to different perspectives. “Students learned to listen and respect different opinions—they started to see that diverse ideas could actually make their project stronger,” one teacher observed. These skills are particularly important in social entrepreneurship, which Seelos and Mair (2005) define as mobilizing diverse resources to address social challenges. Through SEE, students practiced negotiation, constructive dialogue, and collaborative problem-solving, which strengthened their interpersonal and communication skills.

## 2.4 Community Awareness and Civic Engagement

Students showed growing awareness of social issues and a stronger appreciation of civic participation. One student reflected, “I used to think helping others meant donating things. Now I see it’s more about understanding what people truly need.” The program tutor confirmed that students became proactive in addressing community issues: “During the presentations, students discussed social issues like gender inequality and population ageing, showing genuine care and creative thinking about how to respond to community needs.” SEE encouraged students to connect their learning with real community contexts and develop a stronger sense of social responsibility.

## 2.5 Entrepreneurial Mindset and Competency

The SEE program fostered creativity, initiative, and empathy-driven innovation. Teachers noted, “I noticed students began taking initiative—they were more willing to take risks, think creatively, and reflect on why their ideas mattered to others.” Students themselves expressed similar insights: “I realized creativity isn’t about crazy ideas; it’s about solving small problems that really matter to people.” The program tutor reinforced that experiential learning had a stronger impact than traditional classroom lessons: “Experiential learning encouraged students to think independently and take initiative, so we continued using small-class teaching to deepen their engagement.” These experiences helped develop key entrepreneurial competencies grounded in empathy and purpose.

## 2.6 Future Planning and Career Aspirations

Participation in SEE helped students clarify life goals and explore socially responsible career directions. One teacher observed, “Students started connecting their passions with future goals—they began to see that pursuing meaningful work could also be a realistic career choice.” The program tutor noted a similar pattern, emphasizing that students were thinking beyond small projects: “Students started to think about structural and policy problems rather than only small-scale projects, showing clear growth in their critical thinking and future-oriented mindset.” SEE therefore supported both career exploration and the development of socially responsible aspirations.

## 3. Discussion

### 3.1 Learning and Cognitive Development

Students who engaged in SEE reported a stronger ability to connect theory with practice, enhancing critical thinking, problem-solving, and intellectual curiosity. Active engagement appeared to encourage deeper conceptual understanding and more thoughtful responses to social challenges. Teachers observed students questioning conventional ideas and applying knowledge to real-world problems, which reflected meaningful cognitive development. These findings suggest that experiential, proximity-based learning helps students translate abstract ideas into practice more effectively. The results resonate with Fayolle and Gailly’s (2008) contention that SEE stimulates higher-order thinking skills such as critical analysis and opportunity recognition, and with Nicholls’ (2006) emphasis on “moral imagination” as a cognitive tool to navigate ethical dilemmas in social contexts. Actively engaged students demonstrated greater competence in framing community challenges,

such as sustaining elderly livelihoods or addressing environmental concerns. This aligns with scholarship highlighting that pragmatic, collaborative, and problem-solving approaches help students link theory with real-world application (Wilson et al., 2009; Cheung & Chan, 2011). It also illustrates that SEE integrates moral and civic reasoning into decision-making, going beyond purely economic perspectives.

### 3.2 Personal Growth and Self-Awareness

Participation in SEE was linked with students reporting growth in resilience, self-efficacy, and adaptive thinking, helping them reframe setbacks as opportunities for growth. Active learners showed increased confidence, reflection, and emotional regulation. Teachers and tutors emphasized that hands-on experiences encouraged empathy and self-awareness, enabling students to better understand their abilities and values, and fostering humility and a deeper appreciation of human capability. This growth suggests that sustained engagement can help cultivate resilience, self-efficacy, and adaptive thinking. By rehearsing negotiation, resource allocation, and obstacle anticipation, students developed strategies for uncertainty and complexity. Although projects were not fully implemented, the simulation of authentic processes allowed students to practice agency in a structured but realistic setting. This echoes Danko's (2005) argument that entrepreneurship education helps young people clarify values, build resilience, and adapt to changing environments, and supports Kickul and Lyons' (2012) assertion that SEE strengthens both technical problem-solving and soft skills such as leadership, teamwork, and communication. Importantly, students often reframed past difficulties as sources of motivation. In line with Pribadi (2025), fear of failure can be reframed as caution, promoting careful preparation and resilience. SEE thus nurtures a growth-oriented mindset, enabling students to perceive challenges as opportunities for future contribution to society.

### 3.3 Collaboration and Communication Skills

Students reported a stronger ability to work effectively in teams, listen to diverse perspectives, and resolve conflicts constructively through SEE activities. Active engagement provided opportunities for peer interaction and leadership roles that appeared to accelerate skill development. Teachers noted noticeable maturity in teamwork and an appreciation of how collaboration enhances problem-solving. These competencies are critical in social entrepreneurship, which Seelos and Mair (2005) define as mobilizing diverse resources to address social challenges. Students practiced these skills in team discussions and ideation sessions, balancing divergent opinions in order to reach shared decisions on feasible project directions. This collaborative emphasis echoes Wilson et al.'s (2009) call for embedding entrepreneurship into education to ensure students learn life skills beyond business. Collaboration skills enable students to connect theoretical knowledge with practical application, deepen understanding of social issues, and enhance critical analysis and problem-solving abilities, thereby preparing them to become responsible citizens (Ningsih et al., 2025; Nusantari et al., 2022). The Hong Kong experience also suggests that integrating entrepreneurial activities can create learning environments that encourage communication and collaboration (Cheung and Chan, 2011). In this study, relational aspects of learning—engaging with peers and reflecting on the perspectives of disadvantaged groups—strengthened collaboration by fostering empathy and interpersonal connections. By combining experiential, task-focused activities with reflection on societal perspectives, students developed not only teamwork and communication abilities but also the social awareness and ethical sensibilities necessary for responsible collaboration. Socio-scientific issues provide a practical context for enhancing these skills, as they require dialogue, negotiation, and joint problem-solving (Mellyzar et al., 2025; Hidayati, 2019). The findings demonstrate that communication and collaboration skills are intertwined with social awareness, ethical engagement, and the capacity to work constructively within diverse teams—all of which are essential in professional and social contexts.

### 3.4 Community Awareness and Civic Engagement

Students developed stronger social awareness and a deeper understanding of community needs through hands-on projects. Active participants engaged meaningfully with stakeholders and recognized the agency of community members. Both students and tutors reported increased empathy, creative thinking, and proactive approaches to addressing real societal issues. By engaging directly with local residents, students learned to identify and define social problems, adopt multiple perspectives, and propose practical interventions, shifting from viewing disadvantaged groups as passive recipients of aid to recognizing their resilience and agency. Understanding the community and its stakeholders is essential for effective engagement (Lau, 2024). Through SEE, students worked with different stakeholders to address real community needs, gaining practical experience and confidence in making meaningful contributions. Students also gained greater understanding of how social enterprises operate—identifying social problems, mobilizing resources, balancing financial sustainability with social impact, and engaging multiple stakeholders to implement solutions. This balance illustrates SEE's potential to integrate business-oriented approaches with civic development, preparing students as responsible, socially conscious citizens. These outcomes echo Hockerts (2018), who found that early exposure to SEE

heightens students' confidence and motivation to contribute to societal betterment, and align with the Curriculum Development Council (2017) in Hong Kong, which frames entrepreneurship as a means of nurturing values, civic identity, and personal growth. While limited resources and accessibility sometimes constrained participation, SEE still played a role in cultivating empathy, ethical responsibility, and civic commitment.

### 3.5 Entrepreneurial Mindset and Competency

SEE participation was associated with reported growth in creativity, initiative, and strategic problem-solving, encouraging students to innovate with purpose and social responsibility. Active learners demonstrated greater willingness to take intellectual risks and think beyond conventional solutions. Teachers observed that experiential activities helped develop independence, reflection, and practical entrepreneurial competencies. These findings reflect Nugroho, Setiawati and Santoso's (2020) observation that experience-based learning fosters motivation, responsibility, and creativity, as well as Mohan-Neill's (2001) finding that entrepreneurship education positively influences entrepreneurial intention. Students were motivated when learning was tied to tangible outcomes, such as environmental monitoring or accessibility solutions. This reflects Kickul and Lyons' (2012) argument that SEE develops both entrepreneurial competence and empathy, enabling students to innovate while maintaining social responsibility. Furthermore, some students reinterpreted personal struggles as motivations for innovation, illustrating how SEE integrates meaning-making with skill development—a crucial balance for future social entrepreneurs. The entrepreneurial mindset, characterized by opportunity recognition, strategic problem-solving, and resilience in uncertainty (Cui & Bell, 2022; Naumann, 2017; Mathisen & Arnulf, 2013), is malleable and evolves through environmental interactions. SEE nurtures this development by providing real-world, purpose-driven experiences that encourage reflection, risk-taking, and learning from successes and failures, thereby developing both entrepreneurial skills and an adaptive mindset for socially responsible innovation.

### 3.6 Future Planning and Career Aspirations

Participation in SEE was associated with clearer goal articulation, future-oriented thinking, and broader perspectives on career development. Active students showed enhanced awareness of socially responsible career options and opportunity recognition. Teachers noted students beginning to consider broader structural and policy challenges, reflecting growth in both career thinking and critical reflection. These outcomes build on Cheung and Ng's (2010) finding that entrepreneurial activities provide practically useful knowledge, while extending this idea to include the civic dimension of SEE. Through testing ideas, prototyping solutions, and experimenting with business models, students engaged in opportunity recognition (Fayolle & Gailly, 2008), developing entrepreneurial agility. This suggests SEE enhances problem-solving and supports career reflection grounded in ethical and social considerations. Some students reframed personal challenges as motivation for future aspirations, echoing Nicholls' (2006) view that entrepreneurship draws equally on moral imagination and innovation. While sustainable outcomes depend on adequate resources and structured support, evidence suggests SEE equips students with the mindset to pursue careers combining innovation, purpose, and social responsibility. This aligns with the World Economic Forum's call to integrate entrepreneurship into education to prepare students for work and life (Wilson et al., 2009). SEE cultivates essential future-thinking skills, including scenario and systemic thinking and understanding uncertainty and risk, enabling students to plan for complex social, technological, and environmental challenges (Suhendar et al., 2025; Lloyd & Haraldsdottir, 2021). Through testing, prototyping, and iterative problem-solving, SEE strengthens the five dimensions of future-thinking—Visioning and Emotion, Predicting, Planning, Anticipating, and Evaluating—particularly enhancing Predicting and Anticipating skills via simulation, data analysis, and community collaboration (Suhendar et al., 2025). This equips students to connect personal interests with future goals, reflect on career paths, and plan proactively in a socially responsible manner. Nevertheless, Wilson (2016) cautions that SEE within formal institutions is inherently meritocratic and unevenly accessible, limiting diversity by excluding those without formal credentials or lived experience. Such constraints highlight the importance of designing SEE programs that prioritize inclusive access, action-based learning, and recognition of experiential and community-rooted knowledge (Wilson, 2016).

## Conclusion

This study suggests that participation in SEE is associated with students' cognitive, personal, and social development. Students who engaged more actively tended to demonstrate stronger problem-solving ability, self-confidence, and civic awareness across the six developmental domains. Although the differences between Active and Less Active Participants were not statistically significant, the pattern shows slightly higher scores among the more engaged students. Together with qualitative observations, these trends highlight the pedagogical value of structured reflection, collaboration, and purpose-driven creativity, even when participation focuses mainly on idea development rather than full project implementation.

The study contributes to the field by identifying patterns linking SEE participation with students' cognitive, emotional, and social development. Sustained engagement appears particularly important for nurturing creativity, ethical responsibility, social accountability, and career reflection. Beyond the Hong Kong context, these findings suggest a broader implication: when integrated effectively into school curricula, SEE may help balance the strong exam orientation of many education systems. Internationally, SEE aligns with calls from the OECD (2018) and UNESCO (2015) to cultivate well-rounded, socially conscious, and future-ready learners who can contribute to a more sustainable and inclusive world. By encouraging moral imagination, civic engagement, and entrepreneurial thinking, SEE helps prepare young people not only as economic participants but also as socially responsible innovators. The Hong Kong case illustrates how experiential and values-based entrepreneurship education can be adapted locally while still addressing broader goals such as sustainable development, social inclusion, and global citizenship.

This study contributes to the literature in three main ways. First, at the theoretical level, it highlights how SEE connects moral imagination with entrepreneurial competencies, presenting SEE as an integrative approach that combines values-based learning with skills development while encouraging empathy, agency, and reflection. Second, from a practical perspective, the findings show that ideation-focused experiential learning can support student agency, creativity, and civic awareness even without full project implementation, offering useful insights for curriculum design and school-level strategies. Third, methodologically, the study pilots and examines the reliability of a six-domain scale that may be useful for future empirical, longitudinal, and policy-related research on SEE and related educational innovations. Together, these contributions illustrate how SEE can bring together cognitive, ethical, and social learning to help adolescents engage with complex societal challenges in thoughtful and innovative ways.

Several limitations should be noted. First, the reliance on self-reported data may introduce response bias or social desirability effects, which could influence students' reported learning gains. In addition, students' levels of participation were self-selected, meaning that differences between active and less active participants may partly reflect prior motivation or ability rather than the effects of SEE alone. Second, because students developed ideas and business plans without implementing projects, the study could not examine how learning translates into real-world outcomes. Third, variations in participation and access to resources may have influenced individual experiences, which may limit generalizability. Finally, the research was conducted in a single Hong Kong school, and the findings may therefore not fully apply to other educational or cultural contexts.

Future research could address these limitations in several ways. Longitudinal studies would help track longer-term effects on career development, civic engagement, and personal growth. Experimental or quasi-experimental designs, particularly those including full project implementation, could clarify causal relationships between levels of engagement and learning outcomes, and determine whether observed trends lead to statistically significant differences. In addition, larger sample sizes, multi-site studies, and cross-cultural comparisons would strengthen generalizability and help identify contextual factors affecting SEE implementation. Mixed-methods research combining classroom observations, interviews, and performance assessments could also provide a more comprehensive understanding of how SEE supports skill development, social responsibility, and entrepreneurial competencies.

In summary, SEE offers a promising framework for developing well-rounded, socially aware, and future-oriented learners. By combining cognitive learning with ethical reflection and entrepreneurial creativity, it encourages students to approach complex challenges with purpose and empathy. The Hong Kong experience illustrates how education systems can maintain academic rigor while incorporating social innovation, enabling young people not only to prepare for the workforce but also to contribute to a more inclusive and sustainable future.

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The author confirms sole responsibility for the conception, design, data collection, analysis, interpretation, and writing of this manuscript.

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The data that support the findings of this study are available from the corresponding author upon reasonable request. Due to the involvement of student participants and school-based data, access may be subject to ethical and privacy considerations.

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#### **Participant Consent Statement**

Informed consent was obtained from all participants prior to data collection. Participants were informed of the purpose of the study, their rights, and their ability to withdraw at any time without penalty.

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#### **Clinical Trial Registration**

Not applicable.

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