

Challenge Based Learning for Social Entrepreneurship Education

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Abstract

Challenge Based Learning (CBL) provides a promising educational framework for teaching social entrepreneurship, addressing the persistent gap between theoretical knowledge and practical implementation. Through a comprehensive analysis of existing literature and theoretical frameworks, this paper demonstrates how CBL's seven key elements - authentic challenges, stakeholder involvement, interdisciplinary approaches, student agency, work and life skills development, entrepreneurial mindset cultivation, and impact focus - directly align with and support core social entrepreneurship competencies. The integration of Kolb's experiential learning theory, Santos' social entrepreneurship framework, and Rogers' innovation diffusion theory provide a basis for understanding how CBL can enhance social entrepreneurship education. Evidence suggests that CBL particularly excels in developing three critical areas: (1) students' ability to identify and validate social entrepreneurship opportunities through real-world engagement, (2) their capacity to build and manage multi-stakeholder collaborations, and (3) their competency in

measuring and communicating social impact. While implementation of CBL is sometimes demanding, particularly related to resource allocation and stakeholder coordination, our analysis provides specific strategies for addressing these barriers through phased implementation and structured support systems. This paper advances both theoretical understanding and practical application of social entrepreneurship education by providing a comprehensive framework for curriculum design and implementation.

Keywords: Challenge Based Learning, Social Entrepreneurship Education, Experiential learning theory, Positive Social Entrepreneurship Theory, Diffusion of Innovation Theory

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Introduction

Social entrepreneurship has gained significant attention in recent years as a means to address complex societal challenges through innovative business models. Bornstein and Davis (2010) define it as "a process by which citizens build or transform institutions to advance solutions to social problems, such as poverty, illness, illiteracy, environmental destruction, human rights abuses and corruption, in order to make life better for many." As Dees (1998) notes,

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social entrepreneurship combines the passion for social mission with business-like discipline.

Social entrepreneurship education has gained significant momentum in recent years, with many academic institutions offering courses and programs in this area. The field has evolved rapidly, drawing from various disciplines including business, social sciences, and public policy (Kickul et al., 2012). However, despite this growth, the field still lacks systematic frameworks and best practices for curriculum design and pedagogy.

Traditional approaches to educating social entrepreneurs have focused on building upon different fields such as entrepreneurship, sociology, economics, and ethics (Saebi et al., 2019). However, these methods often struggle to bridge the gap between theory and practice, leaving graduates underprepared for the complex realities of managing social enterprises (Pache & Chowdhury, 2012). This challenge is further compounded by the lack of consensus on what constitutes optimal approaches for teaching social entrepreneurship (Tracey & Phillips, 2007; Miller et al., 2012).

As Satar and Alarifi (2021) note in their comprehensive review, there is wide variation in course content, teaching methods, and assessment practices across social entrepreneurship education programs globally. This diversity reflects both the interdisciplinary nature of the field and the ongoing search for effective pedagogical strategies. While this variability allows for innovation and adaptation to different contexts, it also highlights the need for more systematic research and development of best practices in social entrepreneurship education.

In parallel, the field of education has seen the emergence of innovative pedagogical approaches designed to better prepare

students for 21st-century challenges. Studies have documented the role of Challenge Based Learning (CBL) in developing skills such as critical thinking, problem-solving, and collaboration (Johnson et al., 2009). CBL is characterized by its focus on authentic challenges, stakeholder involvement, interdisciplinary approaches, life and work skills, student agency, and impact-oriented learning (Chapel & DePryck, 2023).

While there is a growing body of literature on both social entrepreneurship education (e.g., Miller et al., 2012; Neck et al., 2014) and Challenge Based Learning (CBL, e.g., Membrillo-Hernández et al., 2019; Nichols et al., 2016), there is limited research exploring the intersection of these two fields. This paper aims to address this gap by examining how CBL can serve as a pedagogical framework for social entrepreneurship education.

This paper contributes to both the fields of social entrepreneurship and education by:

1. Proposing a novel approach to social entrepreneurship education that leverages the principles of Challenge Based Learning
2. Identifying synergies between CBL methodologies and the key competencies required for successful social entrepreneurship
3. Exploring potential challenges and solutions in implementing CBL for social entrepreneurship education

By integrating insights from both fields, we seek to advance the theoretical understanding of effective pedagogical approaches for developing social entrepreneurs. This interdisciplinary perspective offers valuable insights for educators, policymakers, and practitioners involved in cultivating the next generation of social change makers.

By integrating insights from both fields, we structure our analysis through several

key sections. First, we present a short literature review examining the evolution of social entrepreneurship education and the development of Challenge Based Learning, highlighting current gaps and opportunities in both fields. We then establish our theoretical framework by integrating three complementary perspectives: Kolb's experiential learning theory, Santos' social entrepreneurship theory, and Rogers' diffusion of innovation theory. This integrated framework provides the foundation for analyzing how CBL's seven key elements align with and support social entrepreneurship education. We proceed to compare CBL with other educational approaches using Rogers' innovation characteristics, demonstrating CBL's distinctive advantages and limitations. The paper then addresses implementation challenges, providing practical solutions grounded in our theoretical framework. Our discussion synthesizes these findings to offer both theoretical insights and practical implications for educators and institutions. We conclude by identifying promising directions for future research and offering recommendations for advancing the integration of CBL in social entrepreneurship education. Throughout this progression, we maintain focus on both theoretical rigor and practical applicability, ensuring our analysis serves both academic understanding and educational practice.

Literature Review

A. Evolution of Social Entrepreneurship Education

Historical Context Social entrepreneurship education emerged in the late 1990s as academic institutions began recognizing the growing importance of combining business skills with social impact (Dees, 1998). Early programs primarily followed traditional business school approaches, adapting them

to include social considerations. Early social entrepreneurship education programs often adapted conventional entrepreneurship curricula to include social impact considerations (Bornstein & Davis, 2010; Kickul et al., 2012). This early period was characterized by what Peredo and McLean (2006) identified as a focus on five key elements: creating social value, recognizing opportunities, employing innovation, tolerating risk, and demonstrating resourcefulness.

Current State Social entrepreneurship education has evolved significantly over the past two decades. According to Satar and Alarifi's (2021) comprehensive review, contemporary SEE programs have developed several distinctive characteristics, including the integration of multidisciplinary approaches, increased emphasis on experiential learning, focus on developing both technical and soft skills, and growing attention to impact measurement and scaling strategies (Ney et al., 2018; Islam, 2022). Modern programs reflect what Miller et al. (2012) describe as a "hybrid approach," combining theoretical knowledge with practical application. This evolution aligns with Kickul et al.'s (2012) observation that effective social entrepreneurship education must balance social mission with business discipline.

The field has drawn from various disciplines including business, social sciences, and public policy (Saebi et al., 2019). Recent research by Gupta et al. (2020) highlights the dual nature of value creation in social entrepreneurship, acknowledging the importance of both social and economic outcomes. Scholars such as Hlady-Rispal and Servantie (2018) and Dwivedi and Weerawardena (2018) emphasize the importance of sustainability, collaboration, impact measurement, resourcefulness, and proactiveness in modern

social entrepreneurship education. Chang et al. (2014) demonstrate how learning-by-doing approaches can be effectively applied to teaching social entrepreneurship.

Rae (2010) argues that enterprise education needed to evolve in response to the 2008 financial crisis, moving from 'old entrepreneurship' focused purely on economic value to 'new entrepreneurship' emphasizing social responsibility, ethics, and sustainability. This shift aligns closely with social entrepreneurship's dual focus on social and economic value creation (Santos, 2012). While Rae's work focused on enterprise education broadly rather than social entrepreneurship specifically, his identification of the need for more socially responsible and ethically-oriented entrepreneurship education presaged many current developments in social entrepreneurship education.

Challenges in Traditional Approaches

Despite significant progress, traditional approaches to social entrepreneurship education face several persistent challenges. Research by Pache and Chowdhury (2012) highlights the difficulty of bridging theory and practice, while Al Issa et al. (2024) identify significant gaps in cultural competency and inclusive solution design. Miller et al. (2012) emphasize the critical need for educational approaches that develop both practical business competencies and social consciousness, identifying specific competencies that social entrepreneurs need. These include opportunity recognition, resource mobilization, and sustainable business model development, alongside capabilities for understanding and addressing social needs.

Neck et al. (2014) provide valuable insights about practice-based approaches in entrepreneurship education more broadly,

arguing that entrepreneurship cannot be effectively taught solely through traditional classroom methods. Their emphasis on learning through doing and real-world engagement aligns well with CBL's focus on authentic challenges and stakeholder involvement. Thomson et al. (2021) note insufficient emphasis on failure and resilience, which are crucial for navigating the setbacks inherent in social entrepreneurship. Stephan et al. (2016) point to the dynamic nature of social problems and rapidly evolving technology as factors that can quickly render educational content outdated. Additionally, Zietsma and Tuck (2012) identify resource constraints in academic settings that restrict opportunities for experiential learning. Yet, based on their recent systematic review of research on social entrepreneurship education, Al Issa et al. conclude that there is an urgent need for comprehensive integration of social entrepreneurship principles into educational frameworks, and that experiential learning with substantial stakeholder engagement, tackling real-world challenges, is crucial to develop the skills necessary for successful engagement in social entrepreneurship.

Building on this foundation, Tracey and Phillips (2007) identify three core challenges specific to educating social entrepreneurs:

1. Managing the dual challenge of creating both social and economic value
2. Developing sustainable resource strategies while maintaining mission focus
3. Measuring performance across both financial and social dimensions

While these authors don't specifically address CBL as a solution, their identified challenges and recommended approaches align closely with CBL's framework (see next section below). CBL's emphasis on authentic challenges and stakeholder involvement

directly addresses Tracey and Phillips' concerns about dual value creation, while its focus on impact measurement helps address their identified challenge of performance assessment.

B. Challenge-based Learning

Development and Key Principles.

Challenge Based Learning (CBL) is an innovative educational approach where students gain knowledge and skills by working through real-world challenges and problems in a self-directed manner (Gallagher & Savage, 2020). In CBL, students take ownership of their learning journey by confronting real-world challenges relevant and meaningful to their lives and communities. Rather than passively receiving knowledge, they actively construct understanding through open-ended challenges with no predetermined solution.

The instructor's role shifts to co-learner and facilitator, coaching students through analyzing the challenge, identifying approaches, testing ideas, and refining strategies. However, students drive their own inquiry, decision-making, and goal-setting. A key focus is integrated development of cognitive skills alongside intrapersonal and interpersonal strengths like self-regulation, resilience, collaboration, and intra/entrepreneurship abilities (DePryck, Wambacq & Keenan, 2022). By grappling with authentic challenges, students build academic knowledge plus the psychological resources and entrepreneurial mindsets vital for lifelong learning, well-being, and success. The challenges derive from real-world issues and contexts meaningful to students' lives. This instills motivation as learners realize their work can positively influence circumstances they care about. Co-agency is fostered by having students engage with diverse stakeholders and

leverage supportive relationships throughout the challenge process.

With students leading the way through personally resonant real-world challenges, CBL cultivates ownership and agency. Students develop intrinsic drive as academic achievements translate to tangible impacts. This purpose-driven experience nurtures the transformative competencies today's learners need. To thrive in 2030 and beyond, today's learners will need not only a robust foundation of knowledge and skills, but also the ability to apply their competencies in innovative ways to navigate novel and complex challenges

CBL is characterized by seven key aspects: authentic challenges, stakeholder involvement, interdisciplinary approaches, student agency, opportunities for developing life and work skills, an entrepreneurial mindset, and a focus on impact (Chapel & DePryck, 2023). This approach has evolved to address what DePryck and Wambacq (2023) identify as the growing need for engaging educational practices that prepare students for complex real-world challenges.

Application in Higher Education. CBL's application in higher education has grown significantly, with Membrillo-Hernández et al. (2019) documenting its effectiveness across various disciplines. Nichols et al. (2016) demonstrate how CBL facilitates the development of critical thinking, problem-solving, and collaboration skills. The approach has been particularly successful in fostering what Gaskins et al. (2015) describe as an entrepreneurial mindset, characterized by innovation, resourcefulness, and the ability to learn from failure.

Current Practices. Contemporary CBL practices in higher education, as documented by Gallagher and Savage (2020), emphasize flexible and adaptive learning environments

that integrate technology and promote active student engagement. Nichols et al. (2016) provide a comprehensive guide to implementing CBL, focusing on the framework’s core components of engaging with real-world challenges, working with stakeholders, and creating implementable solutions.

When examining CBL implementation, Gaskins et al. (2015) document its successful application in engineering education, highlighting how it fosters innovation and problem-solving skills. Membrillo-Hernández et al. (2019) specifically explore the importance of industry partnerships in CBL implementation, demonstrating how engagement with world-leading companies enhances the learning experience.

Recent developments in CBL implementation have focused on what Chapel and DePryck (2023) describe as innovation readiness in higher education institutions, providing frameworks for assessing and improving institutional capacity for challenge-based approaches.

It is crucial to underline how the key elements of Challenge Based Learning align with core aspects of social entrepreneurship. This alignment provides the foundation for our subsequent theoretical analysis and practical recommendations. Table 1 illustrates these fundamental connections, demonstrating the natural fit between CBL’s educational framework and the essential characteristics of social entrepreneurship.

Table 1. Key elements and/or definitions found in the literature on Challenge-Based Learning and Social Entrepreneurship

Challenge Based Learning	Social Entrepreneurship
Authentic challenges	Recognizing and exploiting opportunities to create social and economic value
Stakeholder involvement	Community and stakeholder engagement Networking
Interdisciplinarity	Complex, multifaceted nature of social problems
Student agency: Students have an active role in their own education	Tolerating risk Proactiveness Navigating uncertainty
Developing work and life skills	Critical thinking Problem solving Collaboration Communication Digital Literacy
Entrepreneurial (or intrapreneurial) mindset	Employing innovation Displaying resourcefulness in using scarce available resources Proactive Embrace failure as a learning opportunity
Focus on impact	Ensuring long-term social impact and scalability Developing sustainable business models

Theoretical Framework

The alignment between CBL and social entrepreneurship characteristics provides the basis for our theoretical framework, which examines these relationships through three complementary theoretical lenses: Kolb's experiential learning theory, Santos' social entrepreneurship theory, and Rogers' diffusion of innovation theory. Together they provide a comprehensive foundation for understanding the integration of Challenge-Based Learning in social entrepreneurship education.

Kolb's Experiential Learning Theory. The experiential learning theory, developed by David A. Kolb (1984), is a widely recognized framework that emphasizes the central role of experience in the learning process. According to Kolb, learning is a continuous process whereby knowledge is created through the transformation of experience. The theory presents a cyclical model of learning consisting of four stages: concrete experience, reflective observation, abstract conceptualization, and active experimentation.

1. **Concrete Experience (CE):** This stage involves actively engaging in a new experience or reinterpreting an existing experience.
2. **Reflective Observation (RO):** In this stage, learners reflect on and observe their experiences from multiple perspectives, seeking to understand their meaning.
3. **Abstract Conceptualization (AC):** Learners form new ideas, concepts, or theories based on their observations and reflections, integrating their insights into logical theories.
4. **Active Experimentation (AE):** In this stage, learners apply their newly formed theories and concepts to make decisions and solve problems, testing their implications in new situations.

Kolb argues that effective learning requires learners to navigate through all four stages of the learning cycle, with each stage providing a foundation for the next.

Kolb's experiential learning theory aligns well with both challenge-based learning (CBL) and social entrepreneurship education, providing a solid theoretical framework for the application of CBL in social entrepreneurship education. CBL is an educational approach that involves engaging students in real-world challenges, encouraging reflection, and promoting the application of knowledge to solve complex problems (Malmqvist et al., 2015). This aligns closely with Kolb's theory, which emphasizes the importance of concrete experiences, reflective observation, abstract conceptualization, and active experimentation in the learning process. CBL provides opportunities for students to engage in all four stages of Kolb's learning cycle, facilitating a deep and transformative learning experience. Social entrepreneurship education aims to develop students' skills, knowledge, and mindset to create sustainable social value (Pache & Chowdhury, 2012). Kolb's theory supports this goal by emphasizing the importance of experiential learning in developing practical skills and critical thinking abilities. By engaging in real-world social entrepreneurship challenges, students can develop a deep understanding of the complex issues involved and gain hands-on experience in creating and implementing innovative solutions (Tracey & Phillips, 2007; Al Issa et al., 2024).

Positive Social Entrepreneurship Theory. Social Entrepreneurship Theory, as developed by Filipe M. Santos (2012), provides a framework for understanding the unique characteristics and dynamics of social entrepreneurship. The theory seeks to

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explain how social entrepreneurship differs from commercial entrepreneurship and traditional non-profit work, focusing on the key distinctions in value creation and value capture.

According to Santos (2012), social entrepreneurship is primarily characterized by its emphasis on value creation over value capture. While commercial entrepreneurship typically focuses on capturing economic value for the owners or shareholders, social entrepreneurship prioritizes creating social value for the beneficiaries and stakeholders. This fundamental difference shapes how social entrepreneurs approach problem-solving, resource mobilization, and organizational management.

Santos (2012) argues that social entrepreneurs operate in contexts characterized by institutional voids, where markets and governments have failed to address pressing social needs effectively. In these contexts, social entrepreneurs must navigate complex stakeholder environments and develop innovative solutions that balance social impact and economic sustainability. The theory emphasizes the importance of stakeholder engagement, as social entrepreneurs must align the interests of diverse actors, including beneficiaries, funders, partners, and employees, to create sustainable social change.

Furthermore, Santos (2012) highlights the role of social entrepreneurs in creating and sustaining social value by addressing the root causes of social problems rather than merely alleviating symptoms. This often involves developing systemic solutions that challenge existing power structures and promote inclusive, participatory approaches to problem-solving.

Social Entrepreneurship Theory aligns closely with the principles and practices of Challenge-Based Learning (CBL), providing a complementary framework for understanding how CBL can be effectively applied in social entrepreneurship education.

1. **Emphasis on value creation:** CBL's focus on real-world impact and creating tangible solutions to complex problems aligns with Social Entrepreneurship Theory's emphasis on value creation over value capture. By engaging students in social entrepreneurship challenges, CBL encourages them to prioritize social value creation and develop a deep understanding of the social, economic, and environmental factors that shape social issues.
2. **Stakeholder engagement:** Both Social Entrepreneurship Theory and CBL emphasize the importance of stakeholder engagement in the problem-solving process. CBL provides opportunities for students to collaborate with diverse stakeholders, including community partners, domain experts, and end-users, to develop solutions that are grounded in real-world needs and contexts. This aligns with Social Entrepreneurship Theory's focus on aligning the interests of multiple stakeholders to create sustainable social change.
3. **Innovative problem-solving:** Social Entrepreneurship Theory highlights the role of social entrepreneurs in developing innovative solutions to complex social problems. Similarly, CBL challenges students to think creatively and develop novel approaches to address real-world issues. By providing a structured framework for problem-solving and experimentation, CBL supports the development of the

innovative mindset and skills needed for successful social entrepreneurship.

4. **Balancing social impact and economic sustainability:** Social Entrepreneurship Theory emphasizes the need for social entrepreneurs to balance social impact and economic sustainability in their ventures. CBL provides opportunities for students to grapple with this challenge by designing and testing solutions that must be both socially impactful and financially viable. Through iterative cycles of experimentation and refinement, students learn to navigate the tensions and trade-offs involved in creating sustainable social change.

Social Entrepreneurship Theory offers a valuable framework for understanding the distinctive characteristics and dynamics of social entrepreneurship, emphasizing the importance of value creation, stakeholder engagement, innovative problem-solving, and balancing social impact with economic sustainability. These key elements align closely with the principles and practices of Challenge-Based Learning, suggesting that CBL can be an effective approach for preparing students to become successful social entrepreneurs. By integrating insights from Social Entrepreneurship Theory into the design and implementation of CBL experiences, educators can create a powerful learning environment that supports the development of the skills, knowledge, and mindsets needed for impactful social entrepreneurship.

Diffusion of Innovation Theory. Everett M. Rogers' (2003) Diffusion of Innovation Theory provides a framework for understanding how new ideas, practices, and technologies spread through social networks and communities over time. The theory seeks to explain the

process by which innovations are adopted, the factors that influence adoption rates, and the role of communication channels in the diffusion process.

According to Rogers (2003), an innovation is any idea, practice, or object that is perceived as new by an individual or group. The diffusion process involves the communication of the innovation through various channels over time among the members of a social system. The theory identifies five key stages in the innovation-decision process: knowledge, persuasion, decision, implementation, and confirmation.

Rogers (2003) also identifies five key characteristics of innovations that influence their adoption:

1. **Relative advantage:** The degree to which an innovation is perceived as better than the idea, practice, or object it supersedes.
2. **Compatibility:** The extent to which an innovation is perceived as consistent with the existing values, past experiences, and needs of potential adopters.
3. **Complexity:** The degree to which an innovation is perceived as difficult to understand and use.
4. **Trialability:** The extent to which an innovation may be experimented with on a limited basis before full adoption.
5. **Observability:** The degree to which the results of an innovation are visible to others.

Innovations that are perceived as having greater relative advantage, compatibility, trialability, and observability, and less complexity, are generally adopted more rapidly than those that do not exhibit these characteristics.

Rogers' Diffusion of Innovation Theory provides a valuable framework for understanding how innovative pedagogical

approaches like Challenge-Based Learning (CBL) can be adopted and diffused within social entrepreneurship education.

1. **Relative advantage:** CBL offers several advantages over traditional teaching methods, such as fostering real-world problem-solving skills, promoting stakeholder engagement, and developing an entrepreneurial mindset. By emphasizing the relative advantages of CBL, educators can encourage its adoption within social entrepreneurship programs.
2. **Compatibility:** CBL aligns well with the values and goals of social entrepreneurship education, which emphasize creating social value, engaging with communities, and developing innovative solutions to pressing social issues. By highlighting the compatibility of CBL with these values and goals, educators can increase its perceived relevance and encourage adoption.
3. **Complexity:** While CBL may initially appear complex due to its focus on real-world challenges and stakeholder engagement, educators can reduce perceived complexity by providing clear frameworks, resources, and support for implementing CBL in social entrepreneurship courses. This may include training workshops, mentoring programs, and communities of practice where educators can share experiences and best practices.
4. **Trialability:** Encouraging educators to experiment with CBL on a small scale, such as in a single course or module, can increase its trialability and reduce perceived risks associated with full-scale implementation. Pilot projects and case studies demonstrating the successful application of CBL in social

entrepreneurship education can further encourage adoption.

5. **Observability:** Making the benefits of CBL visible to stakeholders, such as students, community partners, and institutional leaders, can increase its observability and promote wider adoption. This may involve showcasing successful student projects, sharing impact stories, and disseminating research on the effectiveness of CBL in social entrepreneurship education.

By considering these key characteristics of innovations, educators and program leaders can develop strategies for promoting the adoption and diffusion of CBL within social entrepreneurship education. This may involve leveraging existing networks and communication channels, identifying early adopters and opinion leaders, and providing ongoing support and resources for implementation.

Ultimately, the successful diffusion of CBL in social entrepreneurship education will depend on its ability to demonstrate clear benefits for students, communities, and society as a whole. By aligning CBL with the values and goals of social entrepreneurship, and by addressing the key factors influencing adoption, educators can help drive the widespread adoption of this innovative pedagogical approach.

Second, these same innovation characteristics provide a framework for understanding skill development within each of CBL's seven key elements:

1. In authentic challenges, students learn to evaluate relative advantage and trialability of their proposed solutions
2. Through stakeholder involvement, they experience how compatibility and observability affect innovation adoption

3. Interdisciplinarity helps manage complexity through diverse perspectives
4. Student agency develops through understanding and applying innovation principles
5. Life and work skills include innovation diffusion capabilities
6. The entrepreneurial mindset incorporates innovation adoption thinking
7. Impact focus builds on observability principles

This dual application of Rogers' theory enriches our understanding of both CBL as an educational approach and the innovation-related skills students develop through each CBL element.

CBL Framework and Social Entrepreneurship Alignment

As an educational framework, CBL's iterative learning cycle (engage, investigate, act) integrates three complementary theoretical perspectives throughout each of its seven key elements to create a comprehensive approach to social entrepreneurship education.

Each element progresses through repeated cycles of engagement, investigation, and action. For authentic challenges and stakeholder involvement, students engage through Kolb's concrete experience while encountering Santos' tension between social and economic value creation. They also investigate these challenges through stakeholder interactions, supporting Rogers' trialability as they test and refine solutions. Finally, they act by implementing refined solutions based on stakeholder feedback, creating networks essential for innovation diffusion (Gupta et al., 2020; Hlady-Rispa & Servantie, 2018).

This cyclical process continues through interdisciplinarity and student agency.

Students engage with diverse perspectives, investigate through Rogers' compatibility principle by integrating knowledge across fields, and act by synthesizing holistic solutions aligned with Santos' approach to complex social challenges. Student agency develops iteratively as faculty, serving as change agents, gradually increase student autonomy through successive cycles of engagement, investigation, and action.

The cycle extends to developing practical skills, entrepreneurial mindset, and impact focus. Students repeatedly engage with real-world challenges, investigate through Kolb's experiential cycle to build Santos' essential competencies, and act by implementing solutions. The entrepreneurial mindset emerges through iterative cycles integrating Rogers' diffusion principles with Santos' sustainable value creation focus. Impact measurement similarly develops through repeated cycles of engaging with metrics, investigating outcomes, and acting on insights to demonstrate both social and economic value.

Together, these iterative cycles create a theoretically-grounded framework that systematically develops social entrepreneurial capabilities through repeated integration of experiential learning, social value creation, and innovation diffusion principles across all seven CBL elements.

Table 2 maps how the 7 key elements of CBL are encountered through the lenses of Kolb's Experiential Learning Theory, Santos' Social Entrepreneurship Theory, and Rogers' Diffusion of Innovation Theory. The integration of these complementary theoretical perspectives provides a robust framework for understanding how CBL can effectively develop the skills and mindsets needed for successful social entrepreneurship education.

Table 2. Synergies Between Challenge-Based Learning (CBL) and Social Entrepreneurship Education Through Key Theoretical Models

CBL Key Elements	Kolb's Experiential Learning Theory	Santos' Social Entrepreneurship Theory	Rogers' Diffusion of Innovation Theory
Authentic Challenges	- Concrete experience stage: Students engage with real-world social challenges - Reflective observation: Students analyze challenges from multiple perspectives	- Tension between social value creation and economic value capture - Addressing institutional voids where markets/governments have failed	- Relative advantage: CBL allows students to compare solutions to existing approaches - Trialability: Students can test and refine solutions in real contexts
Stakeholder Involvement	- Active experimentation: Students collaborate with stakeholders to develop and implement solutions	- Importance of aligning diverse stakeholder interests to create sustainable social change	- Compatibility: Students align solutions with stakeholder needs and values - Observability: Stakeholders can see the benefits of student solutions
Interdisciplinarity	- Abstract conceptualization: Students integrate knowledge across disciplines to develop holistic solutions	- Addressing the complex, multifaceted nature of social problems requires interdisciplinary approaches	- Complexity management: Students break down problems and integrate diverse knowledge to manage complexity
Student Agency	- Reflective observation and active experimentation: Students take ownership of the learning process and make decisions	- Developing the initiative, leadership and resilience needed for social entrepreneurship	- Innovation-decision process: Students gather information, form attitudes, and make decisions about adopting innovations
Life & Work Skills	- Concrete experience and active experimentation: Students develop practical skills through real-world application	- Building essential competencies for creating social and economic value	- Innovation implementation: Students develop skills in areas like project management, stakeholder communication, and change management
Entrepreneurial Mindset	- Iterative cycles of the learning process foster innovation, resourcefulness and ability to learn from failure	- Cultivating an entrepreneurial mindset focused on identifying opportunities and creating sustainable solutions	- Innovation strategy: Students learn to recognize opportunities, assess market readiness, and develop diffusion strategies
Impact Focus	- Reflective observation and abstract conceptualization: Students measure and analyze the social impact of their work	- Ensuring long-term social impact and developing sustainable business models	- Observability and measurement: Students define outcomes, track adoption, and demonstrate value creation

Authentic Challenges CBL's focus on real-world challenges directly mirrors the core purpose of social entrepreneurship: addressing pressing social, environmental, and cultural issues (Peredo & McLean, 2006). This alignment exemplifies Kolb's concrete experience stage, where students develop a nuanced understanding of complex societal

problems—a crucial foundation for effective social entrepreneurship (Tracey & Phillips, 2007).

Practically, this manifests through students engaging with real community challenges, such as local sustainability issues or social inequality. Through this engagement, students experience what Santos (2012) identifies as

the tension between social and economic value creation. This approach helps bridge the gap between theoretical knowledge and practical application, addressing a key criticism of traditional social entrepreneurship education (Miller et al., 2012).

The authenticity of challenges also supports Rogers' (2003) concept of innovation trialability, as students can test and refine their solutions in real contexts. However, identifying appropriate challenges that balance learning objectives with meaningful social impact requires careful consideration and strong community partnerships.

Stakeholder Involvement Building on the foundation of authentic challenges, stakeholder involvement represents the crucial relational aspect of social entrepreneurship development. In line with Kolb's (1984) active experimentation phase, students learn to navigate complex stakeholder relationships while developing solutions grounded in real-world needs and perspectives.

Stakeholder involvement is a key element of CBL that aligns with social entrepreneurship practices. Research shows that networks and collaborations play a vital role in social enterprise success, helping entrepreneurs access resources, build legitimacy, and scale impact (Gupta et al., 2020). In CBL, students engage with stakeholders through various forms of interaction, from community consultations to organizational partnerships.

Hlady-Rispal and Servantie (2018) demonstrate how social value creation is a collective process involving multiple actors. Through CBL projects, students experience this collective value creation process firsthand, learning to work with different stakeholders while developing solutions to social challenges.

However, meaningful stakeholder involvement requires significant time and resource investment, and careful management of expectations on all sides. Rogers' (2003) diffusion of innovation theory provides insights into how social innovations are adopted and spread through communities, which is relevant for understanding stakeholder engagement in social entrepreneurship.

Interdisciplinarity The interdisciplinary nature of CBL builds upon stakeholder engagement by providing the diverse tools and perspectives needed to address complex social challenges. This aspect exemplifies Rogers' (2003) concept of innovation compatibility, as social entrepreneurs must integrate knowledge from various fields, including business, social sciences, and technology, to address multifaceted societal issues (deBruin & Lewis, 2015; Nga & Shamuganatha, 2010).

Through Kolb's learning cycle, students move from abstract conceptualization to concrete application, synthesizing insights from different disciplines to develop comprehensive solutions. For example, addressing food security might require understanding agricultural science, supply chain management, community development, and business modeling. This integration reflects Santos' (2012) emphasis on developing holistic approaches to social value creation.

However, managing interdisciplinary learning presents unique challenges, including potential conflicts between different disciplinary approaches and the need for faculty collaboration across departments. Success requires careful curriculum design and support structures that facilitate cross-disciplinary dialogue and integration.

Student Agency Building on interdisciplinary foundations, student agency becomes crucial for navigating complex decision-making processes. By empowering students to take the lead in their learning, CBL fosters the initiative, leadership, and resilience that are crucial for social entrepreneurs (Dwivedi & Weerawardena, 2018). This aligns with Kolb's (1984) emphasis on active experimentation and reflective observation, as students learn to make decisions and adapt to changing circumstances.

Student agency is a crucial component of challenge-based learning, as it empowers students to take ownership of their learning and develop the skills needed to navigate the complexities of social entrepreneurship. The importance of students learning to manage uncertainty and take calculated risks is well-established in the literature on entrepreneurship education (Neck & Greene, 2011; Pittaway & Cope, 2007). By engaging in CBL, students have the opportunity to develop these essential skills through hands-on experience and real-world problem-solving.

However, fostering student agency in CBL requires careful scaffolding to ensure that students receive appropriate support while maintaining their autonomy. This balance between guidance and independence is widely recognized in the literature on experiential learning and student-centered pedagogies (Hmelo-Silver, Duncan, & Chinn, 2007; Kirschner, Sweller, & Clark, 2006). Faculty must design learning experiences that provide structure and support while also allowing students the freedom to make decisions, take risks, and learn from their mistakes.

In practice, this might involve providing students with resources, mentorship, and feedback as they work on social entrepreneurship projects, while also

encouraging them to take initiative and explore their own ideas. By creating a supportive environment that values student agency, CBL can help students develop the confidence, resilience, and entrepreneurial mindset needed to tackle complex social challenges.

The development of agency in students aligns with Rogers' (2003) concept of the innovation-decision process, which involves seeking information, forming attitudes, and making decisions about adopting or rejecting an innovation. As students navigate the challenges of social entrepreneurship, they engage in a similar process of gathering information, evaluating risks, and making decisions about how to address social issues.

However, Rogers also emphasizes the importance of communication channels and social systems in the diffusion of innovations. In the context of challenge-based learning, this highlights the need for faculty to create an environment that supports collaboration, knowledge sharing, and peer learning. By fostering a supportive social system, educators can help students develop the skills and confidence needed to take calculated risks and navigate uncertainty.

Furthermore, Rogers discusses the role of change agents in promoting the adoption of innovations. In the educational setting, faculty can serve as change agents by providing guidance, mentorship, and resources to support student learning. However, they must also be mindful of the potential for over-adoption and the need to adapt innovations to fit the specific needs of their students and institutional context.

While the development of student agency is not explicitly discussed in Rogers' work, the innovation-decision process and the importance of social systems in the diffusion of innovations provide a relevant framework for

understanding how challenge-based learning can foster the skills and mindset needed for successful social entrepreneurship. Faculty play a crucial role in creating a supportive environment and serving as change agents, but they must also be responsive to the unique needs and challenges faced by their students.

Opportunities for Developing Life and Work Skills The development of life and work skills builds naturally upon student agency, translating individual initiative into practical capabilities. These skills represent what Santos (2012) identifies as essential competencies for creating both social and economic value. Through Kolb's experiential learning cycle, students develop critical thinking, collaboration, communication, and digital literacy through repeated cycles of experience, reflection, conceptualization, and application.

In CBL activities, students engage in activities such as project management, stakeholder presentations, team leadership, and impact assessment. For example, managing a community project requires students to balance multiple deadlines, coordinate team members, communicate with stakeholders, and adapt to changing circumstances. These experiences expose students to the complexities of real-world challenges and help them develop the skills needed to navigate multifaceted problems.

However, ensuring consistent skill development across diverse student groups presents challenges, particularly in assessing and documenting competency development. Success requires structured reflection opportunities and clear assessment frameworks that capture both technical and soft skill development (Ferns & Zegwaard, 2014).

An Entrepreneurial (or Intrapreneurial) Mindset Building upon these practical skills, CBL cultivates an entrepreneurial mindset that combines innovation with resilience. This aspect integrates Rogers' (2003) diffusion of innovation theory with Santos' (2012) emphasis on sustainable value creation. The approach encourages students to be proactive, resourceful, and innovative—qualities essential for creating and sustaining social ventures (Gaskins et al., 2015; Gallagher & Savage, 2020; Nichols et al., 2016).

Through Kolb's learning cycle, students develop this mindset by experiencing and reflecting on both successes and failures. For instance, students might pivot their project approaches based on stakeholder feedback or develop creative solutions to resource constraints. This practical experience helps students understand what Santos (2012) describes as the distinctive nature of social entrepreneurial opportunity recognition and exploitation.

The challenge lies in fostering this mindset while maintaining focus on social impact. Success requires careful attention to balancing entrepreneurial drive with social mission, ensuring that innovation serves the primary goal of creating sustainable social value (Miller et al., 2012).

Focus on Impact The culmination of all previous aspects, impact focus represents the ultimate goal of both CBL and social entrepreneurship. This alignment with Santos' (2012) emphasis on value creation and capture is fundamental to the educational process. Through Kolb's reflection and conceptualization stages, students learn to assess and measure the real-world implications of their actions.

In practice, this involves developing and implementing impact measurement

frameworks, gathering and analyzing data, and using insights to improve interventions. Students learn to apply what Rogers (2003) terms as observability in innovation outcomes, making abstract impact concrete and measurable. This focus aligns with the increasing emphasis on impact measurement and scaling in social entrepreneurship (Ney et al., 2018; Islam, 2022).

However, measuring social impact presents unique challenges, particularly in educational settings with time constraints. Success requires developing appropriate metrics that capture both short-term learning outcomes and potential long-term social impact, while maintaining focus on the educational process.

Together, these seven aspects create a comprehensive framework that progressively builds students' capabilities while maintaining clear alignment with social entrepreneurship's theoretical foundations and practical requirements. The integration of Kolb's learning theory, Santos' social entrepreneurship framework, and Rogers' innovation diffusion theory provides a robust theoretical foundation for understanding how CBL can effectively prepare students for the challenges of social entrepreneurship.

This theoretical integration is particularly evident in how CBL addresses the evolving needs of social entrepreneurship education identified by contemporary scholars. Satar and Alarifi's (2021) emphasis on comprehensive skill development aligns with Kolb's (1984) focus on transformative learning experiences. Their research shows that effective SEE programs must cover broad topics including social value creation, sustainable business models, and community engagement—all elements naturally embedded in CBL's experiential framework.

The innovative aspects of CBL, viewed through Rogers' (2003) theoretical framework, demonstrate several key advantages:

1. **Relative Advantage** CBL offers clear benefits over traditional teaching methods by providing what Gupta et al. (2020) identify as essential real-world engagement opportunities. This advantage is particularly relevant for addressing the theory-practice gap highlighted by Pache and Chowdhury (2012).
2. **Compatibility** The approach aligns naturally with what Santos (2012) identifies as the dual objectives of social entrepreneurship. This compatibility extends to developing what Hlady-Rispal and Servantie (2018) describe as crucial competencies in sustainability, collaboration, and impact measurement.
3. **Observability** CBL's emphasis on tangible outcomes allows for what Kolb terms "active experimentation," enabling students to see the immediate results of their interventions and adjust accordingly. This aligns with the increasing emphasis on impact measurement in social entrepreneurship (Ney et al., 2018).

The integration of these theoretical perspectives helps explain why CBL is particularly effective in addressing traditional educational limitations. For instance, the challenge of preparing students for resource-constrained environments (Dees, 1998) is addressed through what Kolb identifies as concrete experience and reflective observation within real-world contexts. Similarly, Rogers' emphasis on trialability supports CBL's approach to developing resilience and adaptability, which Dwivedi and Weerawardena (2018) identify as crucial for social entrepreneurs.

Furthermore, the experiential learning cycle inherent in CBL supports what Saebi et al. (2019) identify as the need for developing both technical and adaptive competencies. This is particularly evident in how CBL facilitates:

- Active learning through direct engagement with stakeholders
- Iterative development of solutions through feedback cycles
- Integration of theoretical knowledge with practical application
- Development of adaptive capabilities through real-world challenges

The theoretical grounding of these synergies suggests that CBL is not merely an alternative teaching method but rather a fundamentally aligned approach to developing social entrepreneurial capabilities. As Miller et al. (2012) note, effective social entrepreneurship education must develop both practical competencies and social consciousness—a dual objective that CBL's educational framework naturally supports.

This comprehensive alignment between CBL and social entrepreneurship education, understood through our integrated theoretical framework, provides a strong foundation for addressing the complex challenges of preparing future social entrepreneurs. The framework not only explains why CBL is effective but also suggests how it can be optimally implemented to achieve maximum educational impact.

Comparative Analysis of Educational Approaches

Through Rogers' (2003) innovation diffusion theory, we can analyze how different educational approaches in social entrepreneurship education compare in terms

of their relative advantage, compatibility, complexity, trialability, and observability. The analysis in Table 3 presents a systematic comparison of these approaches.

Challenge-Based Learning demonstrates significant relative advantage through its integration of real-world impact with structured learning frameworks. Unlike other approaches, CBL consistently enables students to develop solutions while maintaining clear educational objectives. Project-Based Learning, while offering concrete deliverables, often focuses more narrowly on specific project outcomes rather than broader social impact. Service Learning provides valuable direct community engagement but may lack the entrepreneurial focus necessary for developing comprehensive social entrepreneurship skills.

In terms of compatibility with social entrepreneurship education objectives, CBL shows strong alignment with both social mission and business requirements. This dual alignment is particularly crucial given what Santos (2012) identifies as the distinctive nature of social entrepreneurship. While Service Learning demonstrates high compatibility with social missions, it may not adequately address the business aspects of social entrepreneurship. Internships vary significantly in their compatibility, depending on the host organization's focus and structure.

The complexity dimension reveals important distinctions among these approaches. CBL requires significant coordination and resources, reflecting its comprehensive nature. This complexity, while challenging, directly mirrors the real-world conditions social entrepreneurs face. Project-Based Learning offers moderate complexity through well-defined parameters, while Case Studies present lower complexity but may not

adequately prepare students for real-world challenges.

Regarding trialability, CBL stands out by allowing iterative solution development and adaptation. This characteristic is particularly valuable in social entrepreneurship education, where students must learn to refine approaches based on stakeholder feedback and changing conditions. Case Studies, while highly triable in an academic setting, offer limited opportunity for real-world experimentation. Internships and Service Learning typically provide fixed parameters that restrict experimentation.

Observability of outcomes varies significantly across these approaches. CBL

provides highly visible results through tangible outcomes and clear impact metrics, allowing students to see the direct consequences of their interventions. Similarly, Project-Based Learning and Service Learning offer concrete, observable results, though often with a narrower scope. Internships demonstrate observable workplace outcomes, but these may not always align directly with social entrepreneurship learning objectives. Case Studies, while valuable for analytical development, offer the lowest observability as students cannot witness the real-world implementation of their analysis.

Table 3. Comparative Analysis of Educational Approaches in Social Entrepreneurship Education Using Rogers' Innovation Framework

Characteristics	Challenge-Based Learning	Project-Based Learning	Service Learning	Internships	Case Studies
Relative Advantage	High: Combines real-world impact with structured learning frameworks	Moderate: Focuses on specific project outcomes	Moderate: Direct community engagement but limited entrepreneurial focus	High: Real-world experience but may lack structured learning	Low: Limited to analysis of past scenarios
Compatibility	High: Aligns with both social mission and business requirements	Moderate: May prioritize project completion over social impact	High: Strong alignment with social mission	Variable: Depends on placement organization	Moderate: Theoretical alignment but limited practical application
Complexity	High: Requires significant coordination and resources	Moderate: Well-defined project parameters	Low: Clear service objectives	Low: Established organizational structures	Low: Structured analysis framework
Trialability	High: Allows for iterative solution development	Moderate: Limited by project scope	Low: Predetermined service activities	Low: Fixed placement parameters	High: Multiple cases can be analyzed
Observability	High: Tangible outcomes and clear impact metrics	Moderate: Concrete project deliverables but may lack broader impact visibility	Moderate: Direct service results visible but limited to specific activities	Moderate: Observable workplace outcomes but may not align with learning objectives	Low: Limited to theoretical analysis without real-world implementation visibility

Key Differentiating Features

The stakeholder engagement patterns across these approaches reveal crucial differences in learning effectiveness. CBL facilitates continuous, meaningful engagement with multiple stakeholders throughout the learning process, enabling students to develop comprehensive relationship management skills. In contrast, Project-Based Learning typically limits stakeholder interaction to specific project requirements, while Service Learning offers direct but often prescribed interactions. Internships provide organization-specific engagement that may not expose students to the full range of stakeholder relationships crucial for social entrepreneurship. Case Studies, being removed from direct stakeholder interaction, offer only indirect learning through analysis.

Innovation potential varies significantly among these approaches. CBL's emphasis on creative problem-solving and iterative development strongly supports the innovation requirements of social entrepreneurship. Project-Based Learning encourages innovation within project constraints, but these boundaries may limit the scope of creative solutions. Service Learning, while valuable for understanding community needs, often operates within existing program frameworks that restrict innovation. Internships offer variable innovation opportunities depending on the organization's culture and the role's parameters. Case Studies, though useful for understanding past innovations, provide limited opportunities for developing original solutions.

The integration of learning across these approaches demonstrates distinctive patterns. CBL provides systematic opportunities for reflection and theory application, creating a comprehensive learning cycle that aligns with

Kolb's (1984) experiential learning theory. Project-Based Learning focuses on learning around specific project deliverables, while Service Learning emphasizes experiential learning without necessarily connecting to theoretical frameworks. Internships offer immersive work-based learning but may lack structured reflection opportunities. Case Studies excel in analytical learning but may not adequately develop practical implementation skills.

This comparative analysis reveals CBL's distinctive advantages in social entrepreneurship education, particularly in its ability to combine structured learning with real impact, facilitate iterative solution development, provide clear metrics for success, and support both social and entrepreneurial skill development. However, successful implementation requires careful consideration of institutional resources, faculty preparation, and student support structures.

Implementation Challenges and Solutions

The implementation of Challenge-Based Learning in social entrepreneurship education presents distinct challenges that can be understood and addressed through our integrated theoretical framework. These challenges, while significant, can be systematically approached through theoretical understanding and practical solutions.

Drawing on Santos' (2012) theory of social entrepreneurship, a primary implementation challenge lies in balancing social impact with educational objectives. Social entrepreneurship education must simultaneously develop students' capabilities while creating meaningful social value. This dual objective presents unique tensions in program design and execution. To address

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this challenge, institutions must develop clear assessment frameworks that measure both learning outcomes and social impact. Programs should be structured to ensure educational scaffolding while maintaining authentic social value creation, supported by feedback mechanisms that address both business viability and social impact metrics.

Through Rogers' (2003) innovation diffusion framework, we can identify several key institutional and resource barriers that affect implementation. Complexity barriers include the need for comprehensive faculty preparation and development, challenges in resource allocation across disciplines, coordination with external stakeholders, and technology infrastructure requirements. Compatibility challenges arise in integrating CBL with existing curriculum structures, aligning with institutional assessment systems, managing faculty workload and reward systems, and securing administrative support mechanisms.

To address these institutional challenges, organizations should develop phased implementation approaches that allow for gradual adoption of CBL methodologies. This includes creating faculty support networks and professional development opportunities, establishing clear protocols for stakeholder engagement and resource allocation, and building flexible assessment frameworks that align with institutional requirements while maintaining academic rigor.

The integration of learning processes, understood through Kolb's (1984) experiential learning cycle, presents another set of challenges. In the concrete experience phase, programs must identify appropriate challenges and ensure meaningful stakeholder engagement while managing project scope and timing. Reflective observation requires

creating structured reflection opportunities and documenting learning processes while balancing action and reflection. Abstract conceptualization challenges include connecting practice to theory and developing analytical frameworks that build transferable knowledge. Active experimentation needs support for iterative development and risk management in real-world contexts.

These learning process challenges can be addressed through implementing structured reflection protocols throughout the learning process, developing clear connections between theoretical frameworks and practical applications, and creating supportive environments for experimentation and risk-taking. Establishing mentoring systems that guide students through the learning cycle proves particularly valuable in maintaining educational quality while supporting innovation.

Stakeholder management represents a crucial implementation challenge that requires careful attention to multiple relationships. Programs must manage expectations across different stakeholder groups, establish effective communication protocols and feedback systems, maintain long-term relationships, and ensure value creation for all participants. Success in this area requires establishing clear stakeholder agreements and protocols, creating structured communication channels, developing long-term partnership strategies, and implementing regular stakeholder feedback mechanisms.

Through this systematic approach to implementation challenges, institutions can develop robust CBL programs that effectively serve both educational and social entrepreneurship objectives. The integration of theoretical frameworks with practical solutions provides a pathway for successful

implementation while maintaining program quality and impact.

Conclusion

Challenge-Based Learning represents a theoretically grounded and practically effective approach to social entrepreneurship education. Through the lens of our integrated theoretical framework, we can understand how CBL's emphasis on authentic challenges, stakeholder engagement, and impact measurement naturally aligns with the requirements of social entrepreneurship education.

Kolb's (1984) experiential learning theory helps explain why CBL's hands-on approach effectively develops crucial entrepreneurial competencies. Santos' (2012) framework demonstrates how CBL supports the distinctive nature of social entrepreneurship, particularly in balancing social and economic objectives. Rogers' (2003) innovation diffusion theory provides insights into successful implementation strategies and adoption patterns.

As social entrepreneurship continues to evolve as a field, CBL offers a robust pedagogical framework that addresses many traditional educational limitations while providing students with opportunities to create tangible impact. The integration of theoretical understanding with practical application suggests that CBL can play a crucial role in preparing the next generation of social entrepreneurs to address complex societal challenges effectively and sustainably.

The future of social entrepreneurship education likely lies in approaches that can effectively bridge theory and practice while maintaining focus on both educational and social outcomes. CBL, with its strong theoretical foundations and practical

effectiveness, represents a promising path forward in this evolving educational landscape.

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