Applying social constructivist learning theory in health professions education: from Vygotsky to the modern clinical classroom

Christopher Leiberman[1] **and Georgios Kizis**[2]

[1]MBChb, Department of Urology, University Hospital Monklands, Scotland, United Kingdom
[2]MBChb, MSc Internal Medicine, Formerly Department of Acute Medicine, University Hospital Wishaw, Scotland, United Kingdom

Abstract

Background: Social constructivist learning theory (SCT) emphasises that knowledge is actively built through social interaction and collaboration. Although widely referenced across health professions education (HPE), its theoretical basis is often poorly articulated. This narrative review outlines SCT's origins and key concepts, critically examines evidence for and against its use, and illustrates practical applications in modern clinical education. **Methods:** Targeted narrative review of core concepts and philosophical foundations of Social Constructivism Theory (SCT), followed by an evidence-based appraisal of strengths, limitations, and educational implications. **Findings:** This was organised into two explicit sections, Key Concepts and Theory and Evidence-Based Evaluation. The first delineated the principal concepts and philosophical foundations of Social Constructivist Theory (SCT); the second provided a critical synthesis of empirical evidence on the efficacy of associated teaching methods. Overall, the literature supports the use of social constructivist approaches to facilitate learning, although their effectiveness is frequently constrained by implementation challenges and heterogeneity in educational contexts, and outcome measures. **Discussion:** SCT underpins widely used approaches such as problem-based learning, case-based learning, simulation, bedside teaching, and feedback. These approaches promote deeper understanding, teamwork, and professional identity formation but rely on skilled facilitation and adequate scaffolding to avoid cognitive overload or inequitable participation. When applied intentionally, SCT provides a robust framework for designing learner-centred, collaborative, and reflective teaching that mirrors the interpersonal realities of health care practice.

Keywords: learning theory, medical education, social constructivist learning theory, problem-based learning, professional identity formation, cognition

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Email: Georgios Kizis (kizisgeorge@yahoo.com)

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Background:

The process of learning in the health professions is inherently social. Students construct meaning through discussion, observation, and shared clinical experience. Learning theories help educators to design teaching that aligns with how people learn, rather than relying solely on tradition or intuition.[1] Among these theories, social constructivism (SCT), developed from the work of Lev Vygotsky, has had particular influence. It merges constructivism, which views learners as active constructors of knowledge,[2] with social learning, which situates learning within social and cultural contexts.[3] Vygotsky argued that higher cognitive functions originate first between people, and only later within the individual.[4]

SCT provides the theoretical backbone for many high-impact strategies, including Problem-Based Learning (PBL), simulation debriefing, and feedback sessions. However, despite its relevance, SCT is often cited superficially in health professions education. This superficial application creates a critical translational gap: many curricula employ collaborative activities without an explicit theoretical rationale, leading to inconsistent application and evaluation.[5]

For instance, without a clear understanding of SCT's core tenets, such as the Zone of Proximal Development (ZPD) and scaffolding, facilitators may prematurely withdraw support, induce

cognitive overload in novices, or allow dominant group members to monopolize learning.[6] This theoretical misalignment undermines the fidelity and effectiveness of these resource-intensive methods.

A clear, integrated framework is therefore needed to move the practice of health professions education (HPE) beyond superficial citation and towards the intentional design of learning environments. This commentary fills that gap by explicitly linking SCT's foundational principles to its practical manifestations and critically appraising the evidence.

This review therefore aims to: 1. Summarize key constructs of SCT, emphasizing its Vygotskian origins. 2. Critically appraise empirical support and limitations of associated teaching methods. 3. Demonstrate how SCT informs practical teaching methods in HPE.

Methods

This paper is a targeted narrative review designed to synthesize core theoretical concepts of Social Constructivist Learning Theory (SCT) and critically connect them to practical application and empirical evidence in Health Professions Education (HPE). Unlike a systematic review, this approach is suitable for providing a comprehensive theoretical foundation and mapping it to diverse, established clinical teaching strategies. The review process was conducted in three phases:

1. Identifying Core Concepts and Philosophical Foundations: A preliminary search was conducted across databases including Google Scholar, ERIC, and PsycINFO to identify seminal works by Lev Vygotsky and key theoretical papers defining core constructs, such as the Zone of Proximal Development (ZPD) and Scaffolding. The focus was on ensuring the accurate representation of the theory's authentic philosophical basis and historical context.

2. Evidence Retrieval and Mapping: To evaluate the theory's impact, a focused search of the medical and health education literature was performed using MEDLINE/PubMed and Web of Science. Search terms included combinations of ("Social Constructivism" OR "Vygotsky") AND ("health professions education" OR "medical education" OR "nursing education") AND ("PBL" OR "simulation" OR "feedback" OR "bedside teaching"). This phase aimed to retrieve empirical studies, systematic reviews, and critical commentaries on the efficacy and implementation challenges of SCT-aligned methods in clinical contexts.

3. Critical Appraisal and Synthesis: The retrieved literature was critically appraised and synthesized in two distinct sections, as presented in the Findings. The first section delineated the principal concepts. The second section provided a critical synthesis of empirical evidence, focusing on studies that demonstrated measurable learning outcomes (e.g., skill acquisition, team performance, decision-making) and those that explicitly discussed implementation challenges such as cognitive load, group dynamics, and facilitator training. This approach ensured a balanced presentation of SCT's strengths and its common limitations, offering a practical framework for HPE educators.

Key Concepts and Theory:

Origins and philosophical basis

Vygotsky proposed that knowledge is co-constructed through social interaction within a specific cultural milieu.[4] Learning is mediated by language and shared tools rather than direct transmission of facts. The educator's role shifts from source of knowledge to facilitator of dialogue, enabling learners to integrate new experiences with prior understanding.[7]

Zone of Proximal Development (ZPD)

A central concept, the ZPD defines the distance between what a learner can achieve independently and what they can accomplish with guidance.[4] Within this zone, the teacher or peer acts as a More Knowledgeable Other (MKO), someone who structures tasks, models performance, and provides prompts that allow the learner gradually to internalize skills.[8] Once mastery is achieved, the support can be withdrawn, freeing cognitive capacity for further development.

Scaffolding

"Scaffolding" describes the temporary supports that enable progression through the ZPD.[6] Effective

scaffolding provides challenge without inducing failure, encourages articulation of reasoning, and promotes reflection. Skilled facilitation therefore requires ongoing diagnosis of learners' needs and adjustment of guidance accordingly.[9]

Language, culture, and dialogue
Dialogue allows learners to negotiate meaning, clarify misconceptions, and co-create understanding.[10] Through talk, learners externalize thought processes that can then be refined through feedback. Vygotsky emphasized that language is both a tool for communication and a mechanism of cognition.[4] Hence, learning activities that encourage discourse, case discussion, feedback sessions, and debriefing are inherently socio-constructivist.

Implications for educators
SCT reframes teachers as designers of learning environments that promote collaboration, autonomy, and reflection. Learning occurs by doing and discussing rather than by passive observation.[11] Educators must foster psychological safety, value diverse perspectives, and help learners link theory to authentic clinical practice.

Evidence-Based Evaluation of SCT:
Several studies demonstrate the benefits of guided social learning. Wood et al. showed that tutoring improved certain children's problem-solving performance compared with their unguided peers.[7] Hmelo-Silver et al. reported that structured scaffolding within problem-based and inquiry learning reduces cognitive load and enhances understanding of complex concepts.[8] Collaborative settings also cultivate metacognitive awareness and self-efficacy.[12] These findings align with adult learning principles highlighting reflection, dialogue, and contextual relevance.[10]

Despite its strengths, SCT has been criticized for inconsistent implementation. Kirschner et al. argued that minimal guidance can overwhelm novices and lead to misconceptions.[6] Dominant personalities may monopolize group tasks while quieter learners disengage.[9] Moreover, the verbal and cultural assumptions underlying scaffolding may not translate across diverse settings.[13] Excessive relativism, where all perspectives are equally valid, can obscure objective performance standards.[14] Finally, socio-constructivist designs demand skilled facilitation; without training, educators may default to unstructured discussion or premature withdrawal of support.[15]

Overall, the literature supports SCT as an effective framework when combined with purposeful facilitation and alignment of learning outcomes. Its weaknesses arise less from theoretical flaws than from superficial or inconsistent application. Balancing autonomy with guidance and fostering equitable participation are essential to success.

Practical Applications in Health Education:
Problem-Based Learning (PBL)
PBL epitomizes SCT in action. Learners collaborate to solve authentic problems, integrating prior knowledge and identifying learning needs. The tutor functions as the MKO, scaffolding reasoning through questioning and reflection.[11] Evidence links PBL to improved communication skills, teamwork, and self-directed learning.[12] However, the approach is resource-intensive and dependent on trained facilitators.

Case-Based Learning (CBL)
CBL extends PBL principles using authentic patient scenarios to bridge theory and clinical practice. Discussion around cases fosters negotiation of meaning and collective reasoning.[13] Systematic reviews indicate that CBL enhances motivation and application of knowledge across medicine, nursing, and allied health.[14] To maximize benefit, cases should be contextually rich and followed by debriefing to consolidate understanding.

Bedside Teaching
Sir William Osler's dictum that, "medicine is learned by the bedside and not in the classroom" reflects SCT's emphasis on situated learning.[15] At the bedside, students co-construct understanding through shared observation, questioning, and feedback.[16] These interactions provide real-time scaffolding within the clinical ZPD. Despite competing service pressures, maintaining authentic bedside learning experiences remains vital for professional identity formation.[17]

Simulation and Debriefing

Simulation provides a psychologically safe space for experiential learning. Scenarios allow learners to practice clinical reasoning, teamwork, and procedural skills without patient risk.[18] The subsequent debrief converts experience into understanding through facilitated reflection, an archetypal socio-constructivist dialogue.[19] High-fidelity simulation improves competence at both undergraduate and postgraduate levels.[20] The facilitator's role in guiding discussion and supporting emotional processing is critical.

Feedback

Feedback is most effective when conceptualized as a social process rather than a one-way transmission.[21] Dialogue between teacher and learner allows co-construction of meaning and joint problem-solving.[22] Positive perceptions of feedback are associated with deeper learning,[23] while peer-feedback cycles enhance confidence and teaching skill.[24] Embedding structured opportunities for both giving and receiving feedback therefore operationalizes SCT within everyday supervision.

Flipped and Blended Learning

Digital technology enables SCT beyond physical classrooms. In a flipped classroom, learners first acquire baseline knowledge individually before engaging in collaborative analysis and application during contact time.[22] This sequencing encourages self-regulated learning followed by social knowledge construction. Similarly, blended learning integrates online flexibility with the social presence of face-to-face sessions.[23] Meta-analyses show improved satisfaction and learning outcomes compared with purely online formats.[24] Both methods rely on clear expectations and facilitation to prevent passive content consumption. Table 1 presents a summary of these principles and strategies.

Table 1: Mapping Social Constructivist Principles to Educational Strategies in Health Professions Education

SCT Principle	Educational Strategy	Role of Educator	Example Outcome
ZPD + Scaffolding	PBL, CBL	Tutor questions, guides, models	Self-directed learning
Social negotiation	Simulation debrief, Feedback	Facilitates dialogue	Reflective practice
Cultural context	Bedside teaching	Models professional behaviour	Professional identity
Distributed learning	Blended / flipped classroom	Designs interactive tasks	Engagement and collaboration

Across modalities, SCT emphasizes that learning in health care mirrors clinical practice: team-based, interactive, and reflective. Its integration within curricula supports not only knowledge acquisition but also communication, leadership, and empathy. Educators must develop expertise in facilitation, diagnosing learners' ZPDs, structuring dialogue, and tailoring scaffolds to individual and group needs.[7,8] Institutional support is equally important. Faculty development programs should explicitly link teaching techniques to underlying theory, enabling educators to articulate why particular approaches work. Assessment methods should capture collaborative reasoning and reflection rather than rote recall. Furthermore, research into SCT's impact should move beyond satisfaction surveys toward measurable outcomes such as clinical decision-making, patient safety behaviors, and team performance.[10,11] SCT also aligns naturally with interprofessional education, where shared meaning-making across disciplines promotes mutual respect and coordinated care.[12] However, the same social dynamics that enhance learning can reproduce hierarchy or exclusion if not managed carefully. Attention to equity, cultural context, and learner voice remains essential.[13]

Conclusion

Social constructivist learning theory offers a coherent foundation for modern health professions

education. When applied deliberately, it transforms classrooms, wards, and simulation suites into communities of inquiry where learners co-create understanding under thoughtful guidance. Key principles of scaffolding, dialogue, reflection, and cultural awareness should inform curriculum design, teaching practice, and faculty development. Future research should explore how explicitly SCT-aligned teaching influences long-term professional competence and identity formation. Ultimately, learning in the health professions is a social activity; embracing that truth can help educators prepare practitioners who think, communicate, and care collaboratively.

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