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Situating Interprofessional Education Curriculum within a Theoretical Framework for Productive Engaged Learning: Integrating Epistemology, Theory, and Competencies

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Résumé de l'article

Interprofessional education (IPE) has a longstanding presence in the health and social care (HASC) professions, by which its sustainable implementation in HASC professional education has the potential to effectively prepare HASC professional students for interprofessional collaborative practice (IPCP). Implementation of IPE has increased over the last two decades with the emergence of a curriculum guided by constructivist epistemology and learning theories that emphasize demonstrating competence in practice. Nonetheless, since IPE first emerged in the early 1960s, most IPE initiatives have been sporadic and lacked guidance through theoretical underpinnings. This conceptual article first discusses why it is important to have theory drive HASC professional education. Next, it explores what is meant by curriculum, followed by a discussion on the importance of curriculum theory to HASC professional education processes. This article then illustrates the learning theories arising from behaviourist and constructivist epistemologies that inform curriculum theory in the HASC professions, with particular emphasis on how constructivist learning theories inform IPE. Lastly, the article proposes a theoretical framework for productive engaged learning through which IPE opportunities may be grounded, leading to student proficiency in interprofessional professional competencies (knowledge, skills, and dispositions), establishment of professional communities of practice, and eventual improvement of patient/client-oriented outcomes.

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Situating Interprofessional Education Curriculum within a Theoretical Framework for Productive Engaged Learning: Integrating Epistemology, Theory, and Competencies

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Abstract

Interprofessional education (IPE) has a longstanding presence in the health and social care (HASC) professions, by which its sustainable implementation in HASC professional education has the potential to effectively prepare HASC professional students for interprofessional collaborative practice (IPCP). Implementation of IPE has increased over the last two decades with the emergence of a curriculum guided by constructivist epistemology and learning theories that emphasize demonstrating competence in practice. Nonetheless, since IPE first emerged in the early 1960s, most IPE initiatives have been sporadic and lacked guidance through theoretical underpinnings. This conceptual article first discusses why it is important to have theory drive HASC professional education. Next, it explores what is meant by *curriculum*, followed by a discussion on the importance of curriculum theory to HASC professional education processes. This article then illustrates the learning theories arising from behaviourist and constructivist epistemologies that inform curriculum theory in the HASC professions, with particular emphasis on how constructivist learning theories inform IPE. Lastly, the article proposes a theoretical framework for productive engaged learning through which IPE opportunities may be grounded, leading to student proficiency in interprofessional professional competencies (knowledge, skills, and dispositions), establishment of professional communities of practice, and eventual improvement of patient/client-oriented outcomes.

Keywords: interprofessional education, curriculum theory, learning theory, experiential learning, social constructivism, situated learning, competencies

Introduction

Within the context of interprofessional education (IPE), theory-driven and informed education practices are necessary to guide educators to develop and implement interprofessional opportunities through which student-centred and patient/client-oriented outcomes can be sustained over time and into practice [1,2]. Health and social care (HASC) professional education, however, has traditionally overlooked theory to inform its practices, resulting in a lack of epistemological cohe-

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siveness between prevailing and contemporary educational theories and what is taught and done in HASC professional education and practice [3]. This has been seen as a barrier to promoting pedagogical approaches that lead to intended student learning outcomes.

Interprofessional education (IPE) is defined by the Centre for the Advancement of Interprofessional Education (CAIPE) as "occasions when members or students of two or more [health and social care] professions learn with, from and about each other to improve collaboration and the quality of care and services" [4, p. 1]. A recent systematic review [3] has demonstrated that most IPE research literature (62%) pays minimal attention to employing theory—a consistent finding that has been observed for decades [5-7]. Realizing the dearth of intentional theory amalgamation in IPE practices, the authors propose a theoretical framework for productive engaged learning in IPE that integrates epistemology, theory, and professional competencies.

This article first discusses the importance of theory in HASC professional education and HASC professional education research. This is followed by what is meant by *curriculum*, since HASC professional education is manifested through interactions and experiences with HASC curriculum, and a discussion on the importance of curriculum theory to HASC professional education processes. This article then illustrates the learning theories arising from behaviourist and constructivist epistemologies that inform curriculum theory in the HASC professions, with particular emphasis on how constructivist learning theories inform IPE. Lastly, the authors propose a theoretical framework for productive engaged learning in which IPE opportunities may be grounded, whereby HASC professional students interact and learn with, from, and about each other, make meaning of such experiences, and employ their interprofessional knowledge, skills, and dispositions in practice.

Significance of theory for health and social care professional education

This article identifies three reasons why HASC professional educators and researchers have overlooked using theory to inform their practices [8]. First, HASC professional educators and researchers trained in post-positivist experimental research traditions[a] might view themselves as being atheoretical, having no affiliation or concern to theoretical perspectives. Second, they might have an underdeveloped or incomplete understanding of the breadth and depth of theories that inform their practices. Third, they might believe that theoretical assumptions informing their practices are already known and thus unnecessary to present in their research publications, presentations, and other forms of output.

However, this notion—that HASC professional educators and researchers, who consider themselves to be pragmatic, clinically oriented individuals and assert that theory has little practical relevance to their practices—is misplaced. No matter how pragmatic or clinically oriented we are, our purposeful actions and practices are guided by certain conscious or subconscious assumptions about what constitutes reality (ontology) and how knowledge is created (epistemology). As such, theory guides us to make our assumptions about how the world works. In other words,

theory offers transparency and anchors the assumptions that inform our practices and actions (e.g., related to research/teaching).

Theory and education practices inform each other and are intricately tied, where theory is iteratively tested and modified in various learning contexts (i.e., theory testing). Additionally, theories can be used to develop and test different curricular and pedagogical approaches (Figure 1). For instance, a behaviourist theoretical perspective sees the learner as an *object* that can accommodate information and be trained when appropriate stimuli are provided. Behaviourism is an embodiment of materialism, the doctrine that denies that the mind is an independent entity of material processes (e.g., the biochemistry of the human brain and associated body systems). Therefore, practice might focus on providing external stimuli (positive/reward or negative/punishment) for learning and assessment. Meanwhile, a constructivist theoretical perspective sees the learner as a subject who has agency to make sense of their social and physical interactions by making cognitive connections to their existing knowledge, experiences, and assumptions about how the world works. In this instance, practice might focus on providing an environment that allows the learner to construct their own meaning from their experiences.

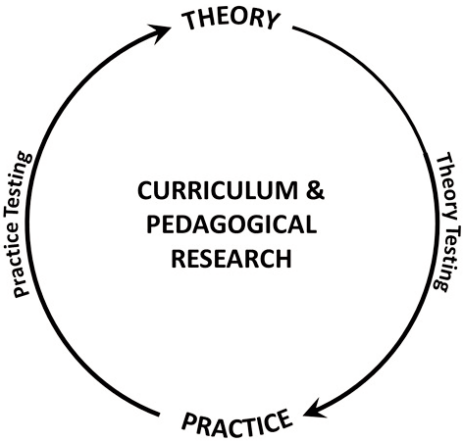

Figure 1: Theory-practice iterative cycle

Additionally, theory helps us better understand presented research and provides insight on the underlying assumptions of practice, action, beliefs, and worldviews. It also helps readers of research to interrogate, critique, evaluate, and possibly adopt research findings, practices, actions, and beliefs. Theory provides us with the necessary framework to improve and make modifications to presented findings, practices, etc. Theory helps with stability of interpretation of research. That is, reliable analysis and interpretation of research data is facilitated by the use of theory in that it helps hold fast and stabilize the assumptions that guided the research process, including the analysis and interpretation of research, and avoid spurious and extemporaneous attempts to analyze and interpret data. Moreover, the use of theory contextualizes and provides a boundary for the validity of the presented findings.

Curriculum in health and social care professional education

More than a century ago, Abraham Flexner was petitioned by the Carnegie Foundation

for the Advancement of Teaching to examine the state of North American medical schools, which were predominantly privately owned institutions that mostly employed part-time instructors, offered non-standardized curricula, and were neither associated with hospital facilities nor universities. At the time, Flexner [9] recommended that medical education undergo major curricular reforms to become integrated into public universities and become associated with teaching hospitals, whereby physicians undertake primary roles in curriculum development, teaching, and research, in addition to their clinical responsibilities.

The term *curriculum* is a broad concept with multiple schools of thought. Its etymology comes from the Latin verb *currere*, which translates as "to run a course." For Joseph Schwab [10]:

> Curriculum is what is successfully conveyed to differing degrees to different students, by committed teachers using appropriate materials and actions, of legitimated bodies of knowledge, skill, taste, and propensity to act and react, which are chosen for instruction after serious reflection and communal decision by representatives of those involved in the teaching of a specified group of students who are known to the decision makers. (p. 240)

Supporting Schwab's [10] definition, Dillon [11] argues that any definition of the term *curriculum* must describe: 1) its nature (i.e., what is its essence, substance, and properties?); 2) its elements (i.e., who, whom, and what are involved? Where, when, why, and how does it take place?); and 3) its practice (i.e., how do we think about it? What actions should we take?). Curriculum researchers explore, examine, and revise contemporary curriculum through the field of Curriculum Studies. Studying historical and contemporary education programs through Dillon's questions involves an exploration of the interconnectedness among these components (nature, elements, and practice). Further analysis and critique of contemporary challenges, difficulties, and weaknesses allow us to be in line with society's evolving social, cultural, and political landscapes, potentially leading to improved curricula and learning opportunities. For instance, following Dillon's ideas on curriculum, this article examines the challenges in IPE curriculum in terms of its adherence to theoretical frameworks and the use of these frameworks in implementing IPE. Further, curriculum theorist Michael Young [12] postulates that:

> It is such goals that give purpose to curriculum theory just as it is better treatment and better medicines that give purpose to medical science. … It is curriculum theory that should enable us to analyze and critique its different forms, and hopefully develop/propose better alternatives. (pp. 197–198)

Hence, over the past several decades curriculum theorists have continuously and discursively defined, contextualized, and critiqued HASC professional curricula, thereby influencing an educational paradigm shift from behaviourist to constructivist learning theories (Table 1) [13-15]. While intricately connected, curriculum

theories and learning theories are inherently different. While curriculum theory informs the development, enactment, and recontextualization of the curriculum, learning theory can be defined as a "coherent framework of integrated constructs and principles that describe, explain or predict how people learn" [16, p. 71]. In other words, curriculum developers and educators employ a variety of learning theories to enact their pedagogical strategies within their curriculum. Because learning theories are situated within diverse epistemological paradigms, it is important that curriculum developers ensure that their learning theories and curriculum theories are epistemologically aligned.

Table 1: Curriculum theories and relevant learning theories in HASC professional education

Epistemology	Curriculum theory	Relevant learning theories
Behaviourism	"School as factory" analogy [20]; Tyler's Rationale [25]	Behaviourist theory of learning [17]
Constructivism	Process model of education [37]	Adult learning theory [51]; Theory of experiential learning [52-54]; Theory of social constructivism [55]; Theory of situated learning [56,57]

Curriculum theory and behaviourism

Behaviourist theory of learning [17] posits that, much like Skinner's notion of operant conditioning [18], learning is merely a response or reaction to an external, environmental stimulus (e.g., being taught by an instructor); in this manner, learning is essentially passive, where the learner is simply a *vessel* that is *filled* with information by the teacher [19]. John Franklin Bobbitt built on Thorndike's work and theorized that the curriculum must be based on pre-defined objectives. In his seminal paper, "The Elimination of Waste in Education" [20], Bobbitt applies Taylor's [21] concepts of scientific management in factory production to pedagogical and curricular design. Bobbitt describes students as raw materials that should be processed by teachers (workers) in schools (factories), so that the students can be transformed into competent graduates (useful products). He argues that such transformation must occur according to pre-defined standards and objectives (quality control). Bobbitt [22] suggests that:

> The objectives and the objectives alone … dictate the pupil experiences that make up the curriculum. It is then these in their turn that dictate the specific methods to be employed by the teachers and specific material helps and appliances and opportunities to be provided. … And, finally, it is the specific objectives that provide standards to be employed in the measurement of results. (as cited in [23], p. 26–27)

Further, Bobbitt postulates that the curriculum must be prescriptive [24] in that teachers and learners alike should have no contribution to the creation of the curri-

culum. Instead, he stresses that determining what is learned and how it is learned rests solely within the jurisdiction of the administrators and government (the managers of the factories). He highlights that:

> The burden of finding the best methods is too large and too complicated to be laid on the shoulders of the teachers. … The ultimate worker, the teacher in our case, must be a specialist in the performance of the labor that will produce the product. (as cited in [23], p. 27)

Ralph Tyler [25] advances Bobbitt's approach to education by emphasizing that objectives must be specific and pre-determined, and these must be met within a specific period (e.g., medical school in four years). Tyler's notion of curriculum was primarily focused on meeting pre-defined objectives with little consideration to the dynamic processes of learning and students' experiences [26]. By the end of the twentieth century, this curriculum model contained within itself the seeds of its own destruction—among other factors—resulting in significant consequences that Flexner and others may have neither anticipated nor intended.

The need for curriculum reconceptualization in health and social care professional education

Towards the turn of the twenty-first century, reconceptualization of the above behaviourist-oriented, time-based curriculum model began to take place in HASC professional education in response to evolving global demographic and socioeconomic profiles (e.g., ageing populations, epidemics partly induced by poverty, conflict, and climate change, and rising HASC-associated costs) [27-30]. Further, the limitations of this curriculum model itself are embodied in its incapability to address individual learner needs and to mitigate the siloed nature of the HASC professions.

First, by emphasizing the behaviourist-oriented learning objectives, this curriculum model prioritizes often superficial memorization and good grades over developing deep and critical understanding, skills, and dispositions leading to clinical competence.[b] These three competencies (knowledge, skills, and dispositions) must be interwoven throughout the HASC professional curriculum so that students are empowered to become critical and agentic practitioners of their professions [31,32]. Similarly, by undermining the processes of educational experiences, this curriculum also neglects the context in which learning occurs, the needs of the individual learner, and the importance of learner-teacher and learner-learner interactions in the development of knowledge, skills, and dispositions [14].

Second, this curriculum's emphasis on narrow, behaviourist-oriented outcomes led to strict profession-specific learning, where students of the same HASC profession learned together and minimally interacted with those from other professions. According to Bloom [33], "[with] increased specialization and separation of disciplines, people are becoming increasingly disconnected from the broad connecting conceptions within disciplines [and] the patterns that bridge [these] disciplines" (p. 6). As such, students who learn together, whether consciously or subconsciously, ultimately create an often-stereotypical classification[c] that defines their collective identity as a dis-

tinct and exclusive professional group. For instance, when medical students learn only with other medical students, they classify themselves as *we*, and distinguish all other students as *them*. Such framing typically results in stereotypes and miscommunication, as well as a lack of mutual respect and trust between and across diverse HASC professions [34,35]. This approach to learning typically generates individualistic and isolated practitioners who would not be able to successfully collaborate in clinical settings, resulting in interprofessional conflict and lack of patient/client-centredness in the diagnosis, treatment, and management of disease and illness [14].

It is important to note that HASC professional education has not completely shifted from a time-based model focused on meeting pre-defined objectives to a competency-oriented model; rather, these influences have been dynamic, where curriculum developers have increasingly adopted a hybrid approach that focuses on meeting specific objectives as well as individualized learning processes—influenced by social constructivist learning theories.

Curriculum theory and constructivism

Increased pressure for the reconceptualization of the behaviourist-oriented curriculum led to the development of constructivist-oriented curriculum models, in which the implementation of IPE would become an integral component. Many curriculum theorists (e.g., Apple, Bevis, Burton, Pinar) refused and counteracted Tyler's Rationale in attempt to de-objectify the curriculum [36] and make the prescriptive curriculum more adaptable. Perhaps one of the most influential thinkers who contributed to the conceptualization of the competency-oriented curriculum is the British curriculum theorist Lawrence Stenhouse.

In his process model of education, Stenhouse [37] describes that any educational process should have four main components, which should be addressed in a cyclic and interactive manner: a) training, b) instruction, c) initiation, and d) induction. Further, he posits that the behaviourist-oriented model can be applied to training and instruction, but not to induction. He argues that induction involves the generation of unpredictable outcomes (e.g., the translation of knowledge into practice); therefore, induction requires, by necessity, that students apply their knowledge, skills, and dispositions in real-world settings, rather than simply memorize and get good grades within contrived contexts [38]. According to Stenhouse, "education as induction into knowledge is successful to the extent that it makes behavioural outcomes of the students unpredictable" (p. 82). Hence, such unpredictable outcomes should not be pre-determined, for doing just that would distort the very nature of learning. This is not to say that Stenhouse calls for the elimination of intended learning goals; Bloom [33] makes this distinction, stating that "teachers cannot necessarily predict the outcomes of instruction in terms of what is typically referred to as specific *learning outcomes*. On the other hand, learning goals, which describe general characteristics of student learning, can be described" (p. 19, emphasis in original).

By understanding the sociocultural processes involved in the development of knowledge, skills, and dispositions, Stenhouse [37] defines *curriculum* as "an attempt to communicate the essential principles and features of an educational proposal in

such a form that it is open to critical scrutiny and capable of effective translation into practice" (p. 4). This definition of *curriculum* that emphasizes the educational processes rather than the outcomes restores it to its very own etymology (*currere*—to run a course). Fundamentally, the curriculum must be *lived*. This narrative is made clear by Thomas Hopkins [39], who argues that the curriculum "must be as flexible as life and living. It cannot be made beforehand and given to pupils and teachers to install" (p. 13). In this manner, the reconceptualization of the curriculum in the HASC professional education was founded upon constructivist approaches.

Constructivism emphasizes a relativist ontology [40], which maintains that there exist "local and specific, constructed realities" [41, p. 165]. Such realities arise from social interactions that can be studied using interpretivist research designs and inductive reasoning processes [42]. Thus, constructivism adopts a subjectivist epistemology, which maintains that research should be geared towards seeking "culturally derived and historically situated interpretations of the social life-world" [43, p. 68]. In this manner, constructivism [44] employs the notion that learning should neither be static nor prescribed; rather, learning is an active and dynamic process, where students construct their own subjective, relational, and situational understandings [45] of taught course materials through the lived curriculum [46]. Thus, learners "are not empty vessels waiting to be filled, but rather, active organisms seeking meaning" [47, p. 387]. In this manner, "teaching is not merely instruction, but the systematic promotion of learning by whatever means" [37, p. 24], with the focus on the means (educational processes) rather than the outcomes. Naturally, such learning should occur in safe learning environments, where students are permitted to voice their thoughts, opinions, and beliefs, as well as engage in reflection-in-action and reflection-on-action practices [48]. In so doing, students of different HASC professions contend with complex topics such as hierarchy and stereotypes, thus providing a mechanism for establishing norms for respectful collaboration and building trust within their interprofessional teams [49]. People who "can interact without misunderstanding do so on the consensus of meanings … dependent upon a deeper consensus of values" [37, p. 122], where such values accentuate mutual trust, reflectivity, and collaboration.

A theoretical framework for productive engaged learning in interprofessional education

This article has briefly presented a rationale for HASC professional education and research to be theoretically driven. Additionally, curriculum, the study of curriculum, and curriculum theory have been outlined as they relate to HASC professional education. The natural alignment among epistemology (how we know), curricular theory, and learning theory, and the movement away from behaviourist-oriented to constructivist-oriented notions of learning have also been emphasized. This section presents a theoretical framework for productive engaged learning in IPE. This framework emphasizes the notion that learning experiences in IPE need to be authentic in that they need to be productive and engaging for the students [50]. Productive engagement allows learners to "understand and examine the architecture" of their learning experiences (p. 272).

The theoretical framework is represented through concentric circles. Moving from the outermost circle to the innermost circle, the authors see *epistemology, curriculum theory, learning theories,* and *competencies.* As discussed earlier, we put forward a constructivist [44] epistemology for describing how we come to know what we know within the HASC professional education context. Aligning with the constructivist paradigm, we also presented the process model of curriculum theory [37]. Again, in alignment with the presented epistemology and curriculum theory, we put forward experiential learning, situated learning, and social constructivism as learning theories. These learning theories are discussed in the following section. The innermost circles of the framework representation present the competencies that need to be developed as part of an IPE program. These competencies are discussed below.

While the framework presents a considerably comprehensive depiction of how HASC professional education ought to be epistemologically and theoretically grounded, this article aims to advance the idea that for HASC educators and students, two inner circles of the framework, namely *learning theories* and *competencies*, should subsume the learning experiences and contexts. These HASC student experiences need to encompass the interplay of three learning theories—the theory of experiential learning [52-54], the theory of social constructivism [55], and the theory of situated learning [56,57]—and professional competencies (knowledge, skills, and dispositions). When this occurs, authentic and meaningful learning is advanced, thereby leading to the establishment of communities of practice and the improvement of HASC

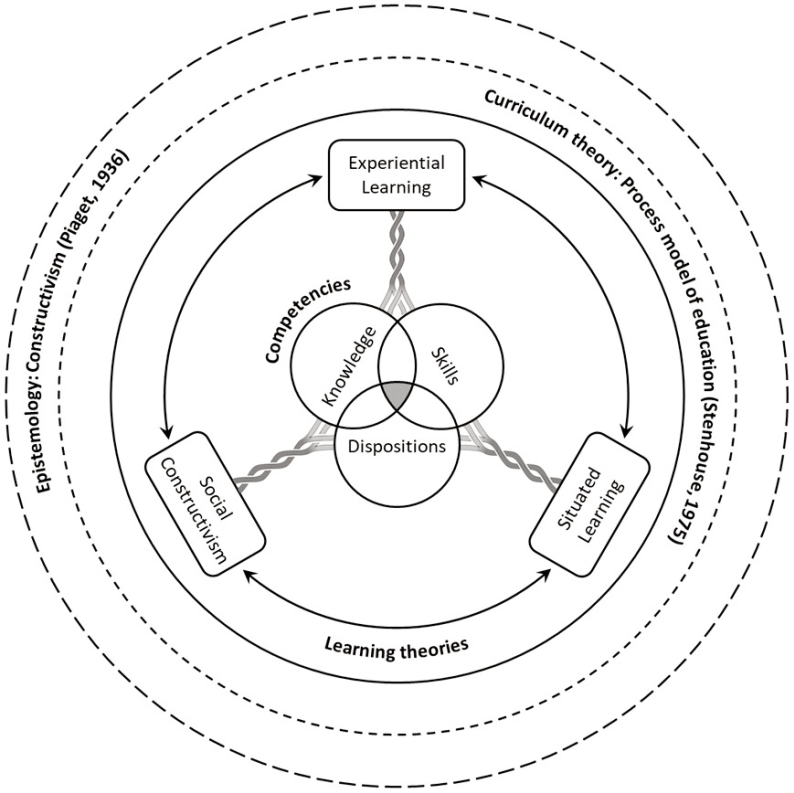

Figure 2: A visual representation of the theoretical framework for productive engaged learning in interprofessional education.

delivery systems through the implementation of interprofessional collaborative practice (IPCP). The interplay of learning theories and professional competencies can be presented through the analogy of a woven cloth, where the three learning theories and the three competencies are represented by threads woven to make a cloth (an entire HASC learning experience; Figure 2).

Generalized learning theories supporting health and social care professional education

The previous section advanced the idea that the constructivist-oriented curriculum paradigm best suits contemporary HASC professional education practices. In line with this, this section highlights three generalized and interrelated learning theories that support HASC professional education and IPE in particular.

Theory of experiential learning. The theory of experiential learning [52-54] describes the cyclical nature in which students engage in purposefully designed concrete learning experiences that are interrogated through reflection and subsequently conceptualized (learned) and enacted (tried); this cyclical nature is a critical component of IPE. The theory of experiential learning is founded upon the construct that learning is not a means to an end, but rather a continuous process grounded in social interactions and experiences. In this respect, experiential learning can offer situations that are unpredictable and occur in authentic contexts. This offers a multidimensional learning experience for the students, where they are engaged in problem posing and solving, critical reflection and analysis, and interacting with others and the physical environment. As such, within the context of HASC professional education and IPE, experiential learning processes involve students who learn *with*, *about*, and *from* each other, where they interact collaboratively and reflect on diverse perspectives in a trustworthy, but accountable, environment. For instance, these interactions allow students in medical, nursing, pharmacy, and physical therapy professional education programs to learn how to solve complex HASC problems, such as post-stroke care, and to make sound patient/client-centred decisions regarding diagnosis, treatment, and management of disease [58].

Theory of social constructivism. Both cognitive and social constructivism are pertinent for understanding the meaning-making processes involved in the implementation of IPE. Cognitive constructivism describes how learning occurs from a neurodevelopmental perspective [44]. However, because individuals engage in the meaning-making process through interactions with others and the environment [59], social constructivism is, indeed, more relevant than cognitive constructivism within the context of IPE [60]. Within the social constructivist paradigm, there is the notion of decentring the role of the teacher and an emphasis that the students are not passive learners; rather, that they are active constructors and re-constructors of their own knowledge and that their social experiences are key in such knowledge construction [55]. Certainly, recognizing the principles of social constructivism is crucial when implementing this contemporary curriculum model, where IPE is encouraged and students learn *with*, *about*, and *from* each other [4]. In our post-

stroke care example above, the students socially construct their knowledge about diagnosis, treatment, and management plans through interactions with each other, mentors, and patients/clients.

Theory of situated learning. The theory of situated learning [56,57] is a social learning theory that posits that the experiential processes involved with IPE implementation are situational and localized. William Hanks [61] states that situated learning signifies "the relationship between learning and the social situations in which it occurs" (p. 14). The situational context occurs through an apprenticeship model, where novices become experts via legitimate peripheral participation. Hence, IPE involves facilitation by faculty experts, whereby students (novices) learn, collaborate, and reflect together within the real-world context of clinical practice. This participation within an interactive community allows the students to develop shared interprofessional knowledge and skills. Further, this participation undermines the classifications and distinguishable identities that students of distinct HASC professions construct. In so doing, the students interact through interprofessional socialization [62], through which they construct a dual professional-interprofessional identity, to which they all belong [63]. Ultimately, the students form a community of practice, whereby they "share case management and provide better health services to patients and the community. The resulting strengthened HASC delivery system leads to improved health outcomes" [64, p. 10].

Generalized professional competencies supporting health and social care professional education

The final piece of the theoretical framework for productive engaged learning in IPE comprises professional competencies. Professional competencies are "disciplinary-specific knowledge, skills, and dispositions associated with effective professional practice" [31, p. 191]. Most, if not all, regulated professions are characterized and identified either implicitly or explicitly by their expected set of competencies. This is no different for HASC professions. Additionally, professional competencies guide many professional education programmatic curricula and student graduation outcomes. Health and social care professional education programs, like many other professional programs, are increasingly becoming competency-oriented, where knowledge, skills, and dispositions associated with the profession are expected to be developed and refined over a continuum that arcs over both the professional education program and professional practice [31]. Earlier, we highlighted that the more behaviourist-oriented educative practices of the past have given way to constructivist-oriented practices that incorporate and emphasize the sociocultural milieu of both the HASC practitioners and their patients/clients. That is, HASC professional educative practices are moving away from task- and outcomes-oriented practices where the locus of control is with the instructor (narrow task/behavioral perspective) toward more collaborative and real-world-oriented practices where learning is diffused among the learners and the instructor, and where broad standards are used to facilitate learners to have agency for their own learning and to support the devel-

opment of competencies needed for their professional practice (broad attribute perspective). Indeed, a cursory examination of the various HASC standards reveals competency-oriented outcomes that focus on the development of appropriate professional and disciplinary specific knowledge, skills, and dispositions (e.g., the Canadian Interprofessional Health Collaborative's National Interprofessional Competency Framework [65] and possibly other HASC professional education standards). For instance, each of the framework's six competency domains (interprofessional communication, patient/client/family/community-centred care, role clarification, team functioning, collaborative leadership, and interprofessional conflict resolution), which describe desired outcomes, is constituted of and integrates knowledge, skills, and dispositions (e.g., attitudes, values, and judgements) [65]. While we know that the overarching goal of HASC professional education programs is the development of professional knowledge, skills, and dispositions, it needs to be emphasized that successful professional practice requires well-developed competencies in knowledge, skills, and dispositions. For professional practice, knowledge, skills, and dispositions are not discrete entities, but are complementary, yet cohesive and inseparable. Thus, for example, having only two of the three competencies well-developed is insufficient for successful professional practice. Simply, one must *know* the practice (knowledge—what resides in the mind but manifested in the real world in some observable form), be *able to* practice (skills—evidenced ability to do in the real world), and have the appropriate *temperament* to practice (dispositions—having a pattern of behavior driven by morals, values, ethics, etc., that is directed to a broad goal).

Conclusion

The call for the implementation of IPE initiatives in HASC professional education dates to the 1960s [66,67]—a consequence, in part, of Flexner's [9] recommendations. Almost 60 years since the initial call for IPE and more than 100 years after the Flexner report, significant progress has been made in recognizing, understanding, and appreciating the value of constructivist-oriented curriculum theory and learning theory in HASC professional education and, more specifically, in IPE. Realizing the dearth of intentional theory amalgamation in IPE practices, this article integrated epistemology, theory, and professional competencies (knowledge, skills, and dispositions) to propose a theoretical framework for productive engaged learning in IPE. The understanding, application, and presentation of philosophical and theoretical assumptions of IPE and IPCP research increases the validity, trustworthiness, and the stability of the research process and findings. In essence, a theoretical framework, such as the one presented here, provides firm foundation for conducting and communicating IPE and IPCP research. As done in this article, IPE practitioners and researchers are invited to apply Dillon's questioning of curriculum's nature, elements, and practice [11] and leverage current theoretical understandings about interprofessional learning to guide their initiatives, improve the evaluation of intended student learning outcomes, and stimulate more sustainable IPE delivery. This has the potential to then lead to student proficiency in interprofessional com-

petencies, the establishment of professional communities of practice, and the eventual improvement of patient/client-oriented outcomes.

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Notes

a. Post-positivists hold a deterministic philosophy in which they focus on cause and effect and strict testing of variables through experimentation using scientific methodology. Further, this research tradition is reductionistic in that complex phenomena are explained through laws that govern the physical world. While there is an attempt to be detached from the experiment, post-positivist researchers also understand that they invariably influence the outcomes of their experiments [40,68].
b. Gruppen et al. [26] posit that a competency involves measuring HASC professional students' performance at meeting minimal proficiency in several domains, including communication, clinical skills, ethics, problem-solving, and professionalism.
c. Bernstein [69] defines classification as "the degree of boundary maintenance between [disciplines]" (p. 158), where strong boundaries create strong classifications.

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