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The Role of Reflection for Continuing Professional Development of In-Service Healthcare Professionals: A Narrative Inquiry in Four Health Professions

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Introduction

Healthcare Providers (HCPs) in Western Europe, South and North America are confronted with increasingly complex clinical situations attributable to rapidly shifting socio-demographic factors afflicting aging populations with chronic illnesses and multimorbidity.[1] Health professionals, as indeed all professionals, shape their practice according to shared values and the needs of the communities they serve: much of this is done through reflection in and on action.[2] Coupled with greater patient engagement and partnership in their care,[3] HCPs are often confronted with health problems and psychosocial situations that are "unique, uncertain, and conflicted"[2] (p. 6) where technical rationality, consisting of "the application of science or systematic knowledge"[4] (p.29) fails. In such situations, professionals generate highly adapted practical knowledge through reflection.[5,6]

According to American pragmatist philosopher John Dewey: "an active, persistent and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends, constitutes reflective thought" [7](p.6). Dewey emphasizes the role of reflection in generating meaning by contrasting present experiences with past ones, a concept he later asserted as essential for building effective learning.[8,9] Nguyen et al.'s[10] conceptual analysis of reflection emphasizes its attentive, critical, exploratory and iterative components, continually shaping one's thoughts and actions. Similarly, Marshall's[11]thematic synthesis of the

concept of reflection, highlighting its cognitive, integrative, iterative and active dimensions, underpins the working definition he advances: "reflection is a careful examination and bringing together of ideas to create new insight through ongoing cycles of expression and reëvaluation"[11] (p.411). While empirical evidence of learning through reflection among healthcare students abound, evidence about in-service HCPs remains scant, contributing to and maintaining the much-decried conceptual confusion about reflection's role in learning.[12-14] Much of what we know about reflection's triggers, processes and outcomes stems from theoretical scholarship. Consequently, over the past decades, reflection has been assigned multiple meanings and purposes,[15] failing to draw clear boundaries between concepts[16] and hindering the emergence of a comprehensive understanding of the phenomenon.[5] We can only agree with Schaepkens et al.'s[17] remarks about how difficult it is to grasp the concept of reflective practice, which is like a slippery bar of soap.

Only a few studies have focused on the processes of reflection by in-service healthcare professionals after initial training and throughout their careers, defined as continuing professional development (CPD).[18] Some studies have focused on the learning processes in light of increasingly complex healthcare problems.[19,20] Among these, Lowe et al.[9] explored how ten occupational therapists perceived the role of reflection as they undertook formal CPD courses. Their interviewed participants reported using reflection in various instances before, during, and after a CPD course. They reported reflecting on their practice and their strengths, identifying learning needs and recognizing the need to enhance their practice. Lowe et al.'s findings suggest that professionals use reflection to

confirm existing knowledge and alter how practitioners understand and approach their practice.

Bindels et al.'s[21] study found that in-service physicians perceived reflection as a cycle of contemplation and action leading to changes in practice, tending towards performance enhancement. Bindels et al. also found that honest and open dialogue and psychological safety were essential conditions for reflection to enhance performance. In their phenomenological study, Gustafsson and Fagerberg,[22] reported that the four registered nurses who participated experienced reflection in situations involving challenging ethical considerations that required courage or imagination. They noted that reflection allowed them to see and adjust to each patient's unique situation, empathize with their problems, and learn and develop professionally. In a grounded theory study, Caty[23] examined how twelve experienced Speech-Language Pathologists (SLPs) use reflection to generate relevant practical knowledge regarding head and neck cancer rehabilitation. The emerging themes portray reflection as an ongoing iterative process and highlight reflection's role in connecting with knowledge from past clinical situations and generating more relevant knowledge for practice. More empirical research is needed to advance our understanding of reflection's role in supporting continuous professional development and lifelong learning.

Study objectives

We sought to construct a dynamic portrait of how reflection contributes to the continuing professional development of in-service health professionals. Specifically, we sought to

establish an empirical and operational portrayal of how reflection is triggered and contributes to competency development and transformative change across four healthcare professions: medicine, nursing, occupational therapy and speech-language pathology. As part of a broader project, this paper presents findings related to the first two specific research objectives, namely (1) to identify the experiences that triggered reflection in professional practice and (2) to describe what clinicians perceive as the role of reflection in their continuing professional development.

Methods

Given the subjective nature of reflection and the exploratory nature of the project, we selected an interpretive qualitative approach,[24] more specifically, narrative inquiry.[25]

Study design

We turned to a narrative inquiry, as defined by Clandinin,[25] because of its potential to provide a dynamic perspective of continuing professional development in health professionals, in particular transformative changes that occur.[26] The approach's sensitivity to social, institutional, and professional influences affords insights into the way:

> "people shape their daily lives by stories of who they and others are and as they interpret their past in terms of these stories. Story, in the current idiom, is a portal through which a person enters the world and by which their experience of the world is interpreted and made personally meaningful" [25](p.2).

Stories yield the meaning individuals make of their experiences, which allows researchers to understand their actions.

Although reflective thought is private, observation of the actions required to tell a story and careful analysis of the written narrative yields trustworthy evidence.[27,28] Storytelling is not simply recounting events; the individual deliberately shapes the description of an event from memory to make it intelligible for the listener.[29] Thus, storytelling can be seen as a simultaneous process aimed to convey "'*what'* transpired and '*how*' an individual experienced"[30] what transpired (p. 536). The interpretation of the story's structure, how the storyteller organizes the components of the story, unveils both the individual's knowledge (descriptions of facts and actions) of past events and the meaning the individual derived from the event, which shaped the decisions they made.[29] Given the impossibility of assessing the integrity of a story, the researcher regards the individual's narrative as a valid and trustworthy portrayal of their reflective process, including its genesis and outcomes.[31] Finally, by turning to narrative inquiry, we deliberately focus on Schön's reflection "on action" rather than 'in action.' This is because reflection "in action" during past events finds itself embedded within subsequent reflection "on action".

Study participants

We recruited 26 health professionals with at least three years of professional work experience in a hospital or community clinic (see Table 1) in four Health professions. Three years was deemed enough time to have encountered a sufficient number of aspects of their practice to be confident in their ability to adapt to unexpected situations.[32] This criteria, our only one, was to ensure that the participants had already been confronted with at least one complex and ambiguous situation, leading to a moment of intense learning through reflection that resulted in an evolution of their practice. We targeted

clinicians of four health professions: medicine, nursing, occupational therapy, and speech-language pathology. Recruitment, on a first come basis took place through our professional and university teaching network; we forwarded the invitation to department heads and clinical units so that they could help us reach out to interested clinicians. Interested candidates received an information and consent form that they were required to sign to participate.

Table 1: Study participants (n=26)

Code	Employment	Practice setting	Degree	Years of practice	Age
OT1	Occupational therapist – clinical administrator	Hospital	Masters	6-10	30-39
OT2	Occupational therapist	Community clinic	Masters	3-5	20-29
OT3	Occupational therapist	Rehabilitation centre	Masters	6-10	30-39
OT4	Occupational therapist	Rehabilitation centre	Undergraduate	16-20	40-49
OT5	Occupational therapist – child development program	University Hospital	Masters	6-10	30-39
OT6	Occupational therapist	Hospital	Undergraduate	16-20	40-49
OT7	Occupational therapist – home care	Community clinic	Masters	6-10	30-39
OT8	Occupational therapist - workplace rehabilitation	University Hospital	Undergraduate	More than 20	40-49
Physician1	Physician - specialist	University Hospital	MD	6-10	30-39
Physician2	Physician - specialist	Long-term care and family medicine clinic	MD	11-15	40-49
Physician4	Physician - specialist	University Hospital	MD	3-5	30-39
Physician5	Physician - family medicine	Family medicine clinic	MD	More than 20	50-59
Physician6	Physician - specialist	University Hospital	MD	3-5	30-39

Physician7	Physician - specialist	University Hospital	MD	16-20	50-59
SLP1	Speech-language pathologist	University Hospital	Masters	3-5	20-29
SLP2	Speech-language pathologist	Rehabilitation centre	Masters	6-10	30-39
SLP4	Speech-language pathologist	Community clinic	Masters	16-20	40-49
SLP5	Speech-language pathologist	Hospital	Masters	16-20	40-49
SLP6	Speech-language pathologist	Hospital	Masters	More than 20	50-59
SLP7	Speech-language pathologist	Community clinic	Masters	16-20	40-49
Nurse1	Nursing advisor	Hospital	Undergraduate	6-10	30-39
Nurse2	Nurse intensive care neonatal	Hospital	Undergraduate	3-5	20-29
Nurse3	Nursing advisor	Hospital	Masters	6-10	20-29
Nurse4	Nurse team lead	Long-term care facility	Undergraduate	3-5	20-29
Nurse5	Clinical Nurse	Hospital	Masters	11-15	30-39
Nurse6	Clinical Nurse	Hospital	Undergraduate	6-10	30-39

Narrative interviews

The narrative interviews took place in two stages. In the first stage, interviewees were asked to plot their professional trajectories on a timeline to establish life stages (e.g., graduation and professional appointments). The interviewer then asked the interviewee to share some transformative moments in their trajectory. After this, the interviewer was instructed to suggest the following: "*Could we turn back to some of the moments you've talked about, and I would ask you to tell me about what lessons were learned?*"

The interview setting stimulates the interviewee to conduct "on the spot" meaning making[28,33] about past reflective experiences. The interviewee tells the story as it comes, sometimes jumping ahead or cycling backwards.[34] The interviewer tries not to interrupt the interviewee, only asking clarifying questions if necessary.[35] The interviewer recorded

the 90-minute interviews and used the recording to write the narrative text. The interviewer's task is to reconstruct the story's structure to capture the interviewee's underlying meaning and write it in the first person as a narrative text.[35]

In the second stage, one or two weeks after the first interview, the interviewer returned the narrative text to the interviewee for validation. A 30-minute discussion was held for the interviewee to amend or adjust the text as required. This stage also constituted member checking.

We trained eight undergraduate and graduate students in the four health sciences academic programs to conduct narrative interviews and write narrative texts. The two-month training, conducted via Zoom (due to the pandemic) included two interactive lectures to impart narrative enquiry's basic notions, with supporting reading materials, followed by an online demonstration by two authors (NF & MEC) conducting narrative interviews with each other. The resulting narrative texts were shared with students and a 2nd online demonstration of the follow-up interviews was conducted two weeks later. Students were then paired and instructed to follow the same process with direct online supervision during the interviews to provide instant feed-back by the same authors (NF & MEC). Students and participants were matched according to their profession to create safe cultural spaces for clinicians to tell their stories. Also, this pairing facilitated mutual understanding because of the shared professional terminology and culture.

Structural analysis of the narrative texts

Storytelling relies on structure for it to be intelligible to another person.[29] Because of this, we selected structural analysis to guide our interpretation of the narrative texts. This analytical approach, focusing on how a story is told, implies breaking down the narrative text into *narrative events* – self-contained episodes comprising the essential components of the story: what, when, where, how and why. To break down the texts in this fashion, we used the French biographical approaches developed by the sociologist Daniel Bertaux[34] and the adult educator Pierre Dominicé[35] as applied in the nursing field by Godin.[36] We analyzed each narrative event and identified its historic-empirical (HE) and psycho-semantic (PS) dimensions that reflect how the individual tells the story and derives meaning. Thus, we were able to observe the *context* which triggered the events, their *temporality*, that is, the sequence in which the narrator organizes and presents events [37-40] and the narrative's *sociality* – the narrator's perception of social interactions.

The task of identifying narrative events in the texts was entrusted to a different group of four research assistants, recruited for this purpose. Under the supervision of an author trained in the French tradition of biographical approaches (CAA), assistants' task was to fragment the texts into narrative events comprising both HE & PS dimensions. Subsequently, all authors contributed to the analysis of the narrative events; first for each participant, and then, within each profession. This process was conducted over multiple research team meetings, allowing for ample opportunity to discuss and resolve discrepancies.

Our team's positionality and reflexivity

Our research team is interdisciplinary (comprising healthcare researchers/scholars in all four disciplines, two education scholars, and a scholar in psychology). We share a similar vision about education and professional development, namely, that it is a "dynamic process of imagining, becoming, and being a member of a health profession"[41] (p.3), evolving through professional competencies, culture, and identity, and occurring in encounters with meaningful learning experiences supported by active learning, reflection, and feedback. We also believe in collaborative work and its values of respect, democracy, trust and authenticity. We upheld these values over the regular meetings conducted during the three years of the project, from June 2020 to December 2023. These meetings aimed to plan the multiple stages of the project, collectively appraise and interpret the data and draw conclusions from the analysis. Our shared reflexivity allowed us to constantly monitor how our subjectivity influenced the research process and the results.

Ethics and funding

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Findings

A total of 26 narrative texts were produced and analyzed. Table 2 presents the number of texts, the average word count and the total number of narrative events per profession. We identified a total of 307 narrative events, of which 34% were told by occupational

therapists, followed by nurses (24%), speech-language pathologists (23%), and physicians (19%). The word count in Table 2 shows that occupational therapists tended to tell longer stories, while nurses' stories were the shortest.

Table 2: Description of the data

	MD	RN*	OT	SLP
Number of texts n = 26	6 (23%)	6 (23%)	8 (31%)	6 (23%)
Average word count	1818	1776	3050	2077
Number of narrative events 307 (all texts)	58 (19%)	75 (24%)	104 (34%)	70 (23%)

*Registered nurses.

We present the findings of the structural analysis, reporting first the scope of the triggers across the four professions in Table 3 and then distinguishing features of how reflection contributes to competency development across the different healthcare professions. The excerpts of narrative texts below were translated from French and are indexed by narrative event and each respective historic-empirical (HE) and psycho-semantic (PS) dimensions.

Table 3: Scope of the triggers of reflection.

MD	RN	OT	SPL
Clinical situations where they felt ill-equipped to intervene	When striving to belong to an interdisciplinary team.	Situations that challenge their humanitarian values	Interactions with patients, their families and other professionals about challenging situations

When facing complex diagnostic problems	Seeking recognition of their skills in the workplace	Challenging encounters with vulnerable patients and other professionals	Listening to caregivers' concerns

Physicians

Physicians chose to talk about clinical situations where they felt ill-equipped to intervene. In such situations, they spoke about reflection to reduce knowledge gaps and achieve optimal clinical performance. Physician7's narrative event below illustrates the perception shared by other physicians that reflection, practiced during independent study, is essential for attaining top performance:

> "nobody was going to come and give me answers. I had to be up to date by doing regular updates, but above all by reading the many existing recommendations concerning the multiple therapies to be offered to patients" (Translation of Physician7's narrative event: 3rd, 4th HE and 21st PS)

Reflection allows the physician to build autonomy by keeping abreast of clinical recommendations and finding solutions to complex situations while becoming less reliant on others. The above narrative event illustrates how the physician's sense of responsibility for patients' healthcare justifies the need to achieve self-reliance in clinical work. Physicians also perceive that resolving problems "on their own" leads to greater confidence in their skills.

Physician2's narrative event also conveys that gaining confidence and becoming less reliant on others is a result of reflection.

> "I still needed to talk to my colleagues about my cases to get their advice or reassurance. Gradually, you gain confidence in what you're doing and are less likely to seek approval and advice from others [...]. So, my colleagues have been much more beneficial than any specific

> mentor; they sometimes give us a different perspective on complex cases. For my part, I believe that confidence is built with every accomplishment." (Translation of Physician2's narrative event: 5th HE and 5th PS)

Here, Physician2 emphasizes how seeking advice from peers for a complex case is necessary, but ultimately, as you gain confidence, you're expected to build self-reliance.

In sum, physicians' narratives reveal their perception of reflection as helpful in solving complex diagnostic problems. In this view, reflection allows the physician to keep abreast of the latest knowledge, build self-reliance and strengthen self-confidence – all of which improve diagnostic performance.

Nurses

Nurses' narratives predominantly describe experiences of moving between workplaces and integrating new work groups. The need to seek a new workplace is initiated because participants do not receive adequate recognition of their skills. Thus, they strive to find a different work setting where they can be accepted and secure acknowledgement for their skills from superiors and patients. In such circumstances, nurses' reflection focuses on themselves, their professional identity and their skill set. Such reflection leads them to seek further development through CPD or by enrolling in graduate studies. Recalling when Nurse1 transitioned from geriatrics to the emergency ward, the narrative event below highlights what she discovered at the time:

> "In my life, everything has always moved very quickly in my head, and I think the emergency room followed this fast rhythm that was ingrained in me. This experience made me discover that I was a well-prepared and organized person, so everything was always ready in case of need." (Translation of Nurse1's narrative event: 6th HE and 13th PS).

Feeling acknowledged for her skills and professionalism allows Nurse1 to discover her preparedness and organization. Nurse4 talked about how satisfied she was when she was hired in a long-term care facility because “it didn't take long for me to stand out in my new role” and “what I liked from the start in the long-term care facility was the great autonomy we had to demonstrate using our clinical judgment and leadership” (Translation of Nurse4’s narrative event: 7th HE and 8th PS).

In their narratives, nurses recounted how reflection played a vital role when striving to belong to an interdisciplinary team. For example, Nurse2’s narrative reports on reflecting on how to communicate effectively with other professionals to develop mutual trust. Nurse2 shared this narrative event to convey that the outcome of her reflection was a sense of belonging, of having finally found the right place for her: “I've learned that it's an environment like this that I need" (Translation of Nurse2’s narrative event: 10th HE and 8th PS).

In sum, nurses’ narratives tell of journeys to find the right place to practice their profession and showcase their professional skills, which entailed transitioning between practice settings. Often, the multiple transitions made them seek continuing professional development to enhance their skills. Their narrative events, telling how they navigated between practice settings to find the one best suited to them, tell of reflection focused on securing recognition as competent healthcare professionals from patients, colleagues, and superiors, which led to critically examining their skills and themselves as professionals.

Occupational therapists

In their narratives, occupational therapists talked about challenging encounters with vulnerable patients and other professionals. Occupational therapists perceive that reflection is triggered by situations that challenge their humanitarian values. Reflection involves seeking ways to enhance and expand their practice to meet more of their patients' needs and advocate for their rights. For example, OT5's narrative event below highlights how she discovered that she already possessed the necessary tools to intervene and innovate in challenging situations:

> "As I began my practice and gradually took on challenges that initially unsettled me, I learned I was better equipped than I thought. My training enabled me to develop autonomy in research and reflection and use my creativity to find answers myself." (Translated from OT5's narrative event: 4th HE and 18th to 24th PS).

This narrative event illustrates OT5's awareness through reflection that she already has the self-efficacy required to be creative and push the limits of her profession. In the same vein, one of OT2's narrative events (14th HE and 18th to 19th PS) tells how being part of an interprofessional care team allowed her to share the outcomes of her reflection on a patient's capacity to accomplish daily life activities, which led to new ways of practicing her profession. In a subsequent narrative event, she tells how she felt a sense of powerlessness within her institution that spurred her reflection about more effective ways to assist vulnerable patients:

> "Although I understand what's at stake, living through this situation confronted me head-on. It reinforced my need to act as a change agent for my clients, but at the same time, it confronted me with organizational and systemic issues for which I perceived to have little leverage. I realized that I wanted to have the potential to change things and to fight for the rights of people in vulnerable or precarious situations" (Translation of OT2's narrative event: 15th to 19th HE and 20th to 21st PS).

The outcome of OT2's reflection was discovering how to become an activist for clients' rights.

In sum, the occupational therapists who participated in our study perceived reflection as playing a role in expanding the scope of their practice and profession, enhancing their collaborative practice skills and acquiring skills to be a change agent in their work environment.

Speech-language pathologists

Most of the speech-language pathologists' narrative events involved interactions in challenging situations with patients, their families and other professionals. These events made them reflect on the importance of promoting their profession to other professionals and establishing partnerships to serve their patients and their families better.

For instance, in one narrative event, SLP6 intervened in complex cases involving children and their families. Her reflection focused on how, in her work, she takes the time to teach parents and other professionals to appreciate the importance of speech-language pathology:

> "I'm doing a lot more promotion of children's needs. I want to inform other professionals on the team about the impact of language difficulties on behaviour. For each child in my care, I make sure I take a full case history and leave no stone unturned. If I see family factors that need to be addressed, I don't hesitate to teach parents and refer to the right resources" (Translation of SLP6's narrative event: 12th HE and 22nd to 24th PS).

SLP4's narrative event below stems from an episode in her practice when she performed speech-language assessments of children, a task for which she was very well trained. However, the experience of listening to their parents' concerns taught her the importance of taking the time to listen and provide a safe space for parents to express their emotions. She acknowledges, however, how unnerving it was at first:

> "We can be very task-focused in speech-language pathology sometimes, so it's easy to sweep the more emotional elements of the person under the rug to focus on our assessment, not to mention the fact that we often don't know what to do with this type of experience, with which we're less comfortable" (Translation of SLP4's narrative event: 7th HE and 20th to 23rd PS).

Such reflection leads SLPs to focus on treating patients holistically and place communication at the heart of their interventions. This awareness strengthens SLPs' relationships with patients, which, in turn, reinforces their confidence in their abilities and approaches.

In their narratives, speech-language pathologists convey that reflection is triggered by challenging situations related to communication and relationships with patients, their caregivers, and other professionals. In these instances, reflection's perceived role is to strengthen confidence in their abilities and approaches and support advocacy for patients and their profession.

Discussion

We sought to construct an empirically based dynamic portrait of how reflection contributes to continuing professional development in four health professions: medicine, nursing, occupational therapy and speech-language pathology. We believe that use of storytelling's communicative power has allowed us to fathom what is hard to put into words. The participant narratives provided glimpses into how health professionals reflect on their practice to support skill enhancement, confidence, self-reliance and interpersonal relationships. More specifically, participant narratives highlighted how reflection is being triggered by perceived gaps in their knowledge and skills when confronted with complex cases, the desire to belong and be acknowledged by a group of colleagues and patients,

and the need to advocate for patients' health as well as each profession's unique contribution to healthcare.

Interestingly, our set of narrative texts powerfully conveys that reflection provides the foundation to build clinical and psychosocial skills and introspective capacity, contributing to what Ng et al. called "collaborating with, communicating across and navigating other systems"[42] (p. 316). Our findings also align with Diaz's[43] et al.'s suggestion that reflection is a socially mediated cognitive process.

As for the perceived outcomes of reflection, we acknowledge that our findings didn't provide insights into incremental changes to practice, however many narrative events led participants to adopt a critical view of themselves as professionals, their skills or their profession, leading to improvement, transformation, or even redirection of their professional practice. This finding echo Fox et al.'s[44] finding, using a similar story-telling methodology, that physicians' change processes are guided by self-directed learning. In particular, narrative events describe developing skills such as problem-solving, decision-making in complex and ambiguous situations, and integrating conflicting views and interests. In this sense, our results align with those of Bindels et al.[21,] who found that in-service physicians consider that reflection leads to personal performance improvement. Narrative events also portrayed the role of reflection in developing skills for counselling, building interpersonal relationships and collaboration. As noted by researchers working on critical reflection, such findings suggest reflection may lead to more compassionate and humanistic care,[42] especially for occupational therapists and speech-language pathologists. Our findings also indicate that reflection plays an important role in

professional agency: a professional's capacity to actively construct and judge what they will attend to in practice.[45,46] This is particularly highlighted by nursing narratives in which many nurses reported having changed workplaces to seek acknowledgement of their skills and greater autonomy.

Finally, our findings concur with scholars who argue that reflection plays a central role in developing an epistemology of practice or practice-based knowledge.[5,47-52] Indeed, changes in professional practice reported in the participants' narratives can be viewed as examples of professional knowledge emerging from reflection. This knowledge, according to Schön,[6] manifests itself in the highly contextualized and rigorous performance required to intervene in situations where technical rationality is powerless.

In that sense, our findings echo de la Croix and Veen's[53] provocative thought experiment about reflective zombies that highlights the need for a practice-based epistemology embracing the contextualized and individualized nature of knowledge produced through reflection. Although such knowledge may pose epistemological challenges to the dominance of evidence-based knowledge in the health professions,[5] our findings concur with authors, such as Bannigan and Moores,[54] who suggested that practice-based knowledge and evidence-based knowledge should be viewed as complementary, as both inform the professional thinking that ensures high-quality care.

Limitations of this study

Shaepkens and Lijster's claim that constant change in healthcare practices and contexts prevents "anyone from definitely formulating what the outcome of reflection should be for everyone, at all times, and everywhere"[53](p.120). Thus, it is impossible to claim that our portrayal of how health professionals reflect on their practice applies universally. Instead, we aimed to describe perceptions of the circumstances that trigger reflection and its outcomes, as held by a sample of professionals in four professions. Hence, participants selected events according to the interview requirements while telling their stories. This intentional selection aimed to convey a subjective and singular perspective about reflective events from the past may be considered opinion rather than scientific data.

However, we took significant measures to minimize this risk. Firstly, the narrative texts are co-authored by an in-service clinician and a student of the same profession. Based on the clinician's oral story, the student composed a narrative text, adding a layer of interpretation that attenuated the story's singularity. Finally, our data set contains multiple co-authored narratives (n=26), and the structural approach we used to interpret and analyze the data further attenuated the risk. We are confident that our analysis yielded a scientifically valid and credible portrayal of reflection.

Impacts for practice

By granting healthcare professionals the freedom to tell their stories of reflection, participants came to critically examine their "theories-in-use," as described by Argyris and Schön.[55] As our participants did in our study, reflecting orally with peers makes these personal theories available for enrichment and consolidation. In a way, reflection with peers substantially supports learning from experience. Furthermore, instructors may

enhance their students' reflective skills by intentionally separating peer discussions about *what happened* from how individuals interpret *what happened*. By reflecting and sharing such interpretations with colleagues, individuals may identify actionable avenues for improvement.

Reflection's unpredictable nature significantly complexifies its teaching and assessment despite multiple approaches and tools developed by health sciences educators.[56-60] Schaepkens and Lijster's claim that "reflection fundamentally resists systematization"[53] (p.120) indicates that reflection is best learned through practice and not by following fixed rules and guidelines.

In sum, as displayed in our findings, the perceived role of reflection on learning should encourage instructional designers in CPD for the health professions to implement ampler opportunities for reflective exchanges with peers and a structural approach to narrative in their training programs.

Conclusion

Our findings suggest that reflection becomes salient when healthcare professionals face complex and ambiguous situations. To ensure that professional interventions are most effective in these situations, participants told us how they leverage experiential and biomedical knowledge in the artistic crafting of competency to improve, transform, and redirect their practice. The longitudinal perspective afforded by narrative inquiry allowed us to gain a deep and dynamic understanding of how healthcare professionals reflect on

their professional experiences and critically examine their theories in use to advance their continuing professional development.

Lessons for practice

- Reflection may be perceived differently among professions in healthcare, and it is triggered by unique professional situations and encounters with patients and other professionals.
- Storytelling or narrative approaches could provide useful insights for needs assessment and evaluation of CPD.
- Parsing out *what happened*, what was experienced and what is the meaning (*structural analysis of past events*) can be a powerful device for continuing self-directed learning.

References

1. Skou ST, Mair FS, Fortin M, et al. Multimorbidity. *Nature Rev Dis Prime*. 2022;8(48)doi:https://doi.org/10.1038/s41572-022-00376-4
2. Schön DA. *Educating the Reflective Practitioner: Toward a New Design for Teaching and Learning in the Professions*. Jossey-Bass; 1987.
3. Pomey MP, Clavel N, Normandin L, et al. Assessing and promoting partnership between patients and healthcare professionals: Co-construction of the CADICEE tool for patients and their relatives. *Health Expect*. Aug 2021;24(4):1230-1241. doi:10.1111/hex.13253
4. Schön DA. *Knowing-In-Action* : The New Scholarship Requires a New Epistemology. *Change: The Magazine of Higher Learning*. 1995;*27*(6):27–34. doi:https://doi.org/10.1080/00091383.1995.10544673
5. Kinsella EA. Professional knowledge and the epistemology of reflective practice. *Nurs Phil*. 2009;11(1):3-14. doi:https://doi.org/10.1111/j.1466-769X.2009.00428.x
6. Schön DA. *The Reflective Practioner: how professionals think in action*. Basic Books; 1983.
7. Dewey J. *How we think: A Restatement of the Relation of Reflective Thinking to the Educative Process*. D.C. Heath & Co Publishers; 1933.

8. Dewey J. *Experience and Education*. Kappa Delta Pi Lecture. Simon & Schuster; 1938 (1997):96.
9. Roessger KM. The effect of reflective activities on instrumental learning in adult work-related education: A critical review of the empirical research. *Edu Res Rev*. 2014;13:17-34. doi:https://doi.org/10.1016/j.edurev.2014.06.002
10. Nguyen QD, Fernandez N, Karsenti T, Charlin B. What is reflection? A conceptual analysis of major definitions and a proposal of a five-component model. *Med Educ*. 2014;48(12):1176-1189. doi:10.1111/medu.12583
11. Marshall T. The concept of reflection: a systematic review and thematic synthesis across professional contexts. *Refl Prac*. 2019;20(3):396-415. doi:https://doi.org/10.1080/14623943.2019.1622520
12. Caty M-È, Kinsella EA, Doyle PC. Reflective practice in speech-language pathology: A scoping review. *Int J Sp-Lang Path*. 2015/07/04 2015;17(4):411-420. doi:10.3109/17549507.2014.979870
13. Lowe M, Rappolt S, Jaglal S, Macdonald G. The role of reflection in implementing learning from continuing education into practice. *J Conti Educ Health Prof*. 2007;27(3):143-148. doi:10.1002/chp.117
14. Lingard L, Vanstone M, Durrant M, et al. Conflicting Messages: Examining the Dynamics of Leadership on Interprofessional Teams. *Acad Med*. 2012;87(12)doi:10.1097/ACM.0b013e318271fc82
15. Wigg R, Cushway D, Neal A. Personal therapy for therapists and trainees: a theory of reflective practice from a review of the literature. *Refl Prac*. 2011;12(3):347-359.
16. Mann K, Gordon J, MacLeod A. Reflection and reflective practice in health professions education: a systematic review. *Adv Health Sci Educ*. 2009;14:595-621.
17. Schaepkens SPC, Veen M, de la Croix A. Is reflection like soap? A critical narrative umbrella review of approaches to reflection in medical education research. *J Adv Health Sci Educ*. 2022;27(2):537–551. doi:https://doi.org/10.1007/s10459-021-10082-7
18. Sachdeva AK. Continuing Professional Development in the Twenty-First Century. *J of Contin Educ Health Prof*. 2016;36:S8-S13. doi:10.1097/ceh.0000000000000107
19. Price DW. To effectively address complex Healthcare problems, continuing professional development must evolve. *J Contin Educ Health Prof*. 2023;43(4S):S59-S63. doi:https://doi.org/ 10.1097/CEH.0000000000000537
20. Alsop A. *Continuing professional development in health and social care: Strategies for lifelong learning. 2nd ed.* Wiley-Blackwell; 2013.
21. Bindels E, Verberg C, Scherpbier A, Heeneman S, Lombarts K. Reflection revisited: how physicians conceptualize and experience reflection in professional practice – a qualitative study. *BMC Med Educ*. 2018;18(105):1-10. doi:10.1186/s12909-018-1218-y
22. Gustafsson C, Fagerberg I. Reflection, the way to professional development? *J Clin Nurs*. 2004;13(3):271-280. doi:https://doi.org/10.1046/j.1365-2702.2003.00880.x
23. Caty M-È, Kinsella EA, Doyle PC. Reflective processes of practitioners in head and neck cancer rehabilitation: a grounded theory study. *Int J Sp-Lang Path*. 2016;18(6):580-591. doi:https://doi.org/10.3109/17549507.2016.1143974

24. Merriam SB, Tisdell EJ. *Qualitative Research; A Guide to Design and Implementation*. The Jossey-Bass Higher and Adult Education Series. Jossey-Bass; 2016.
25. Clandinin DJ, Cave MT, Berendonk C. Narrative inquiry: a relational research methodology for medical education. *Med Educ*. 2016;
26. Konopasky A, Varpio L, Stalmeijer RE. The potential of narrative analysis for HPE research: Highlighting five analytic lenses. *Med Educ*. 2021:1-7. doi:10.1111/medu.14597
27. Bleakley A, Farrow R, Gould D, Marshall R. Making sense of clinical reasoning: judgement and the evidence of the senses. *Med Educ*. 2003;37(6):544-52.
28. Riessman CK. Analysis of Personal Narratives. In: Gubrium JF, Holstein JA, eds. *Handbook of Interviewing*. SAGE Publications; 2001:695-710.
29. Labov W. *The Language of Life and Death: The Transformation of Experience in Oral Narrative*. Cambridge University Press; 2013.
30. Bleakley A. Stories as data, data as stories: making sense of narrative inquiry in clinical education. *Med Educ*. 2005;39(5):534-540. doi:https://doi.org/10.1111/j.1365-2929.2005.02126.x
31. Clandinin DJ, Connelly FM. *Narrative Inquiry: Experience and Story in Qualitative Research*. The Jossey-Bass Education Series. Jossey-Bass; 2000:211.
32. Benner P, Tanner C. *Expertise in Nursing Practice: Caring, Clinical Judgment, and Ethics*. Springer Publishing Company.; 2009.
33. Connelly FM, Clandinin DJ. Stories of Experience and Narrative Inquiry. *Educ Res.* 1990;19(5):2-14. doi:10.3102/0013189x019005002
34. Bertaux D. *Le récit de vie (4e édition)*. Armand Colin; 2016.
35. Dominicé P. *La formation biographique*. L'Harmattan; 2007.
36. Godin M-J. *Le développement du leadership clinique infirmier et celui de la leaderrévélés par les récits de vie d'infirmières qui exercent ce leadership*. Université de Sherbrooke; 2019.
37. Labov W. Some Further Steps in Narrative Analysis. *J Narr Life Hist*. 1997;7(1-4):395-415. doi:10.1075/jnlh.7.49som
38. Labov W, Waletzky J. Narrative Analysis: Oral Versions of Personal Experience. *J Narr Life Hist*. 1997;7(1-4):3-38.
39. Riessman CK. Strategic uses of narrative in the presentation of self and illness: A research note. *Soc Sci & Med*. 1990/01/01/ 1990;30(11):1195-1200. doi:https://doi.org/10.1016/0277-9536(90)90259-U
40. Labov W. Speech actions and reactions in personal narrative. In: Tannen D, ed. *Analyzing Discourse: Text and Talk*. Georgetown University Free Press; 1982:219-247. *Georgetown University Round Table on Languages and Linguistics 1981*.
41. Bélisle M, Lavoie P, Pepin J, et al. A conceptual framework of student professionalization for health professional education and research. *International J Nurs Educ Schol*. 2021;18(1)doi:https://doi.org/10.1515/ijnes-2020-0104
42. Ng SL, Mylopoulos M, Kangasjarvi E, et al. Critically reflective practice and its sources: A qualitative exploration. *Med Educ*. 2020:1-8. doi:https://doi.org/10.1111/medu.14032

43. Diaz BA, Rieker J, Ng S. Teaching critical reflection in health professions education with transformative-vygotskian praxis. *Adv Health Sci Educ*. 2023;28:1191-1204. doi:https://doi.org/10.1007/s10459-023-10209-y
44. Fox RD, Mazmanian PE, Putnam RW. An Overview. In: Fox RD, Mazmanian, PE, Putnam RW, eds. *Changing and Learning in the Lives of Physicians*. Praeger; 1989:7-28.
45. Kinsella EA. Technical rationality in Schön's reflective practice: Dichotomous or non-dualistic epistemological position. *Nurs Phil.* 2007;8(2):102-113. doi:https://doi.org/10.1111/j.1466-769X.2007.00304.**x**
46. Titchen AE, Steven J. Explicating, creating and validating professional craft knowledge. In: Higgs JT, Angie, ed. *Practice knowledge and expertise in the health professions*. Butterworth-Heinemann; 2001: 48-56.
47. Kuper A, Veinot P, Leavitt J, et al. Epistemology, culture, justice and power: non-bioscientific knowledge for medical training. *Med Educ*. 2017;51:158-173.
48. Richardson BH, Joy Dahlgren Abrandt, Madeleine. Recognizing practice epistemology in the health professionsIn: Higgs J, BarbaraDahlgren Abrandt, Madeleine, ed. *Developing practice knowledge for health professionals* Butterworth-Heinemann; 2004:1-14.
49. Raelin JA. Toward an Epistemology of Practice. *Acae Manag Learn & Educ*. 2007;6(4):495-519. doi:https://doi.org/10.5465/amle.2007.27694950
50. Ng SL. Reflection and reflective practice: Creating knowledge through experience. *Sem Hear*; 2012:117-134.
51. Henry SG. Polanyi's tacit knowing and the relevance of epistemology to clinical medicine. *J Eval Clin Prac*. 2010;16:292-297.
52. Henry SG. Recognizing tacit knowledge in medical epistemology. *Theo med & bioeth*. 2006;27(3):187-213.
53. de la Croix A, Veen M. The reflective zombie: Problematizing the conceptual framework of reflection in medical education. *Persp Med Educ*. 2018;7(6):394-400. doi:https://doi.org/10.1007/S40037-018-0479-9
53. Schaepkens SPC, Lijster T. Mind the gap: a philosophical analysis of reflection's many benefits. *Teach Leadn in Med*. 2023;35(3):368-377. doi:https://doi.org/10.1080/10401334.2022.2142794
54. Bannigan K, Moores A. A model of professional thinking; Integrating reflective practice and evidence based practice. *Can J Occup Ther.* 2009, 76(5):342-350. doi: https://doi.org/10.1177/000841740907600505
55. Argyris C, Schön DA. *Theory in Practice: Increasing Professional Effectiveness*. Jossey-Bas Publishers; 1974.
56. Monaghan SF, Blakely AM, Richardson PJ, Miner TJ, Cioffi WG, Harrington DT. The reflective statement: A new tool to assess resident learning. *J Surg Res*. 2012;178(2):618-622. doi:10.1016/j.jss.2012.07.034
57. Koole S, Dornan T, Aper L, et al. Factors confounding the assessment of reflection: a critical review. *BMC Med Educ*. 2011;11(104):1-9.
58. Wald HS, Reis SP. Beyond the margins: reflective writing and development of reflective capacity in medical education. Review. *J Gen Int Med*. Jul 2010;25(7):746-9.

59. Aronson L, Niehaus B, Hill-Sakurai L, Lai C, O'Sullivan PS. A comparison of two methods of teaching reflective ability in Year 3 medical students. *Med Educ*. 2012;46(8):807-814. doi:10.1111/j.1365-2923.2012.04299.x
60. Wald HS, Borkan JM, Scott Taylor J, Anthony D, Reis SP. Fostering and Evaluating Reflective Capacity in Medical Education: Developing the REFLECT Rubric for Assessing Reflective Writing. *Acad Med*. 2012;87(1):41- 50. doi: 10.1097/ACM.0b013e31823b55fa