Integrating reflective practice into public health postgraduate programs to develop professional capabilities

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Abstract

This review article explores the integration of reflective practice into public health postgraduate training programs to enhance the professional capabilities of students. It emphasizes the significance of experiential learning in authentic settings, followed by reflection that fosters professional identity formation. This article also discusses the benefits of reflective practice, such as enhanced self-awareness, empathy, and professional identity formation. Based on the existing literature, this review proposes eight steps to effectively utilize reflective practice, including faculty training, identifying critical incidents for reflection, and guiding self-reflection. It also highlights the challenges in developing and sustaining reflective practice, including motivating and training faculty, building mutual trust, ensuring its continuity and carrying out robust impact evaluations. Despite these challenges, fostering a culture of reflection in public health practice is essential for developing competent and capable public health professionals.

Keywords: Reflection, capability, post-graduate, public health

Introduction

According to the World Health Organization, public health is defined as "*the art and science of preventing disease, prolonging life, and promoting health through the organized efforts of society*."[1] Use of the term 'art' reflects the need for practical, adaptable, and creative approaches in addressing challenges. Similarly, health professions education must focus on developing professional competence through meaningful experiential learning and reflection, fostering professional identity and growth.[2]

In public health, professionals often face complex problems in diverse contexts. Delivering good health care in this context demands not just competence but capability – the ability to adapt, innovate and continuously improve.[3] Constructive feedback and exposure to unfamiliar situations enhances this capability.[3] Research highlights that workplace-based reflective practice improves the practitioners' capabilities, leading to better patient outcomes.[4,5] Schön emphasized the importance of reflection-in-action, a critical component for refining professional practice when existing theories are insufficient.[6,7]

This review explores how faculty can utilize reflective practice to nurture the professional identity and capabilities of postgraduate students. Building on existing literature, it aims to highlight the relevance of reflective practice and outlines actionable steps for its application in the training of public health students.

What is reflection?

Reflection is a process in which thoughts are 'turned back' to make meaning from experiences. It is defined as "*a metacognitive process that occurs*

before, during, and after situations to develop a greater understanding of self and situation so that the future encounters with similar situations are informed."[8] This introspection informs future actions. Understanding 'self' builds self-efficacy (confidence) and understanding the ´situation´ helps define and develop one's professional roles and responsibilities.

The reflection cycle consists of three steps: 1) plan, 2) do, and 3) review.[8] Notably, this aligns with widely quoted Kolb's experiential learning cycle:[9] 1) active experimentation, 2) getting experience by doing it, 3) reflecting on the experience gained, 4) abstract conceptualization of learning by making meaning out of it. Experiential learning builds knowledge, skills, and self-awareness through reflection, enhancing readiness for future challenges. Notably, the reflective practice plays a crucial role in achieving higher levels of Bloom's Taxonomy, particularly in the cognitive domains of analysis, synthesis, and evaluation.[10]

Potential benefits of reflection

According to Piaget's theory,[11] reflection-in-action helps students develop a mental schema (framework) suitable to practice in the given context. In practical terms, it helps students accommodate diverse perspectives, enhance positive emotions, develop problem-solving abilities, and understand their roles as professionals.[8]

Existing literature shows that reflective practice offers some short-term benefits to students such as enhancement in their self-awareness, being self-directed, improving grades, benefits in summative assessment and development in empathy.[12] Personal reflection was found to improve moral reasoning ability among students, develop emotional intelligence and convert stress into more positive emotion.[13]

Continued reflective practice yields long-term benefits both in Professional Identity Formation (PIF) and professional capabilities.[14,15] PIF *is a complex and transformative process of internalizing a profession's core knowledge, skills, values, and beliefs resulting in an individual who thinks, acts, and feels like a member of a professional community.*[16] This transformation occurs during the process of socialization, as learners' personal identities evolve into professional identities. This evolution is shaped, both consciously and unconsciously, through the influence of mentors and

role models.[17] Finally, deep reflection can play a key role in bridging the gap between Inner Development Goals—such as being, thinking, relating, collaborating, and acting, with outer Sustainable Development Goals focused on health and environmental well-being.[18]

Steps for initiating Reflective Writing practice

The following steps have been suggested for initiating reflective writing practice within the constraints of the postgraduate curriculum of public health programs, typical exposures in the field of public health, and recent publications in the field of reflective practices:[19,20] Figure 1 presents key steps in a visual format.

Step 1: Faculty sensitization: Faculty should be aware of several key aspects of reflective practice, including its purpose, frameworks, methods of reflection, their role as mentors, and how to assess student reflections.[21] The reflective practice can be seamlessly integrated into their routine teaching or public health work. It can also be included as a component of the performance appraisal system, providing faculty with the opportunity to gain practical experience in reflective practice where they gain practical experience of it while developing their own perspectives and methods of reflection.

Step 2: Decide the purpose and framework for reflective practice

The purpose of reflective practice in public health encompasses both personal and professional development. Its purpose is to build the capabilities required to achieve higher public health goals such as health promotion and disease prevention, addressing social determinants and promoting equity, and finally developing a resilient healthcare system for universal health coverage. Achieving these higher goals require not only technical expertise but also profound self-awareness and critical thinking, which can be cultivated through the process of deep reflection. To enable 'deep reflection', departments or universities should collaboratively choose focus areas and models for reflective practice. Notably, reflective frameworks contribute to comprehensiveness, supporting the development of practices, as well as assessment and evaluation plans.

Step 3: Co-construct the culture of reflective practice with students and faculty

Designing reflective practice programs requires collaboration and co-operation between students and faculty. To ensure support and address

operational challenges, it is crucial to involve other stakeholders, such as administrators and members of the medical education unit. Sustained commitment from all stakeholders is necessary to achieve meaningful and lasting outcomes.

The program can begin with student and faculty volunteers and gradually expand through iterative cycles of action, reflection, and improvement. Faculty can also incorporate informal reflective sessions into the existing curriculum by incorporating informal reflective sessions. For example, Boyle et al. introduced the concept of the 'reflective café' as a pedagogical tool, involving three sessions spread across an academic year, where students share their reflective stories in a supportive and confidential environment.[22]

Such approaches can be adapted to public health education by leveraging informal student-teacher interactions during field visits, retreat meetings, post-survey de-brief, team huddles, story-telling sessions, peer sharing and informal chats duri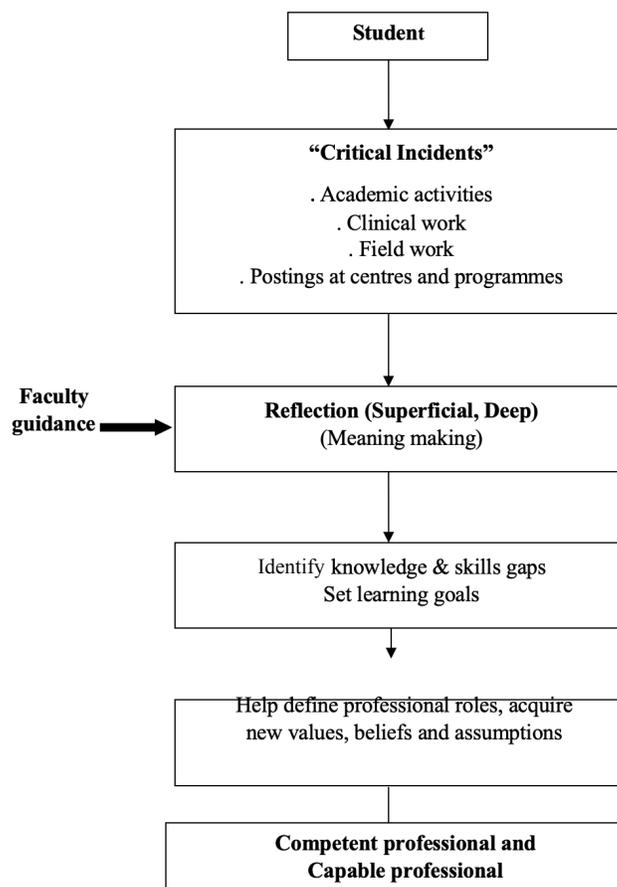ng formal events etc. These moments offer valuable opportunities to integrate reflective practice, fostering deeper insights into community health issues in the context, and possible solutions.

Step 4: Identify critical incidents/experiences for reflection

A critical incident approach involves identifying key moments, where students experience 'success', 'failure' or significant learning opportunities. Proper planning is essential for this approach, as it provides valuable insights into what strategies were effective and what areas require improvement.[23]

Identifying critical incidents with clear boundaries of 'success' and 'failure' can be challenging, as public health practice often involves long-term processes, such as developing programs, monitoring and evaluation, or training healthcare workers for service delivery. Therefore, it may be practical to start with critical incidents related to routine academic activities, such as field visits, workshops, journal clubs, seminars, case presentations, health education sessions, or outbreak investigations.

Figure 1: Summary of steps to professional capability through reflective practice in public health programs


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                    ┌─────────────┐
                    │   Student   │
                    └──────┬──────┘
                           ↓
          ┌─────────────────────────────────┐
          │        "Critical Incidents"      │
          │        . Academic activities     │
          │        . Clinical work           │
          │        . Field work              │
          │ . Postings at centres and programmes │
          └────────────────┬────────────────┘
                           ↓
Faculty    ┌─────────────────────────────────┐
guidance → │  Reflection (Superficial, Deep)  │
           │        (Meaning making)          │
           └────────────────┬────────────────┘
                           ↓
           ┌─────────────────────────────────┐
           │  Identify knowledge & skills gaps │
           │        Set learning goals         │
           └────────────────┬────────────────┘
                           ↓
           ┌─────────────────────────────────┐
           │ Help define professional roles, acquire │
           │  new values, beliefs and assumptions    │
           └────────────────┬────────────────┘
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           ┌─────────────────────────────────┐
           │     Competent professional and    │
           │       Capable professional        │
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Students should revisit the identified critical incidents and evaluate them objectively by responding to specific, open-ended questions (Table 1). This structured approach promotes focused and meaningful reflection while ensuring that the workload remains manageable. Encouraging students to reflect on their strongest or weakest performances in these activities allows them to derive valuable lessons and insights. However, requiring reflection on every activity could lead to fatigue for both students and faculty. To mitigate this, opportunities and incidents for reflection should be carefully chosen, thoughtfully integrated into the curriculum, and systematically scheduled within students' training programs.

Step 5: Introduction of reflective practice and choice of method

Reflective practice can be introduced to students by emphasizing the immediate benefits, such as being self-directed, and benefits in assessment grades. Over the period, to retain their commitment, they may be incrementally sensitized to their professional roles and responsibilities to achieve higher goals of public health practice. Reflection methods such as storytelling, digital recordings, verbal narratives, and PowerPoint presentations are particularly suitable. These methods allow students to explore and articulate their experiences in meaningful ways.

Step 6: Role of faculty in guided self-reflection

Immediate student-faculty interaction is crucial for aiding incident recall; therefore, protected time should be allocated for this purpose and explicitly included in the curriculum and timetable. During these interactions, faculty should actively encourage students to move beyond superficial questions and engage in deep, reflective discussions. Faculty can help students to relate their findings to self, family, and community. This approach helps students analyze situations critically, derive deeper insights, set meaningful learning goals, foster a sense of commitment, and clarify their professional purpose.

Faculty-driven reflective questions should challenge students' underlying values, assumptions, and beliefs, aligning their reflections with their evolving professional roles. For instance, Table 2 highlights examples of superficial versus deep questions in the context of a vaccination campaign. These examples demonstrate the use of positive, tailored questions—a method shown to stimulate deeper-level reflection and enhance students' understanding.[24]

Step 7: Documentation of reflection

Students should document and compile evidence of their academic work and reflections, as this process supports both personal growth and program evaluation. It is suggested that to enhance the impact of reflective practice, students should be encouraged to write in the first person rather than the third person. As noted by Charon and Hemann, the act of writing itself cultivates the skills of reflection.[25] Recording reflections on the same day enhances recall and provides a foundation for systematic thinking. This approach facilitates a more personal, introspective, and engaging learning process, ultimately enriching their professional development in public health.[26]

Reflection documentation can also occur asynchronously through online platforms, offering flexibility and accessibility.[27] Similarly, electronic health records have been explored as valuable tools for learning and reflection.[28] By documenting their reflections systematically, students can effectively track their progress while contributing to the overall evaluation of training programs.

Table 1: Reflective open-ended questions

Level	Questions
Description	*What happened?*
Analysis and interpretation	*What went well? And What did not?* *How did I respond? Why did I respond the way I did?* *What does this mean? And how does this practice link to theory?*
Evaluation	*What is my learning? What do I need to know (more) about the subject to improve future encounters? What do I need to change/improve in me?*
Future	*How should I plan to address gaps in my knowledge and skills? How would I handle similar situations in the future?*

Step 8: Assessment of reflection, feedback, and evaluation of practice

The purpose of the assessment is to evaluate competence and provide formative feedback. However, assessing reflections can be challenging for faculty and may feel uncomfortable for students. The literature suggests focusing on the depth of reflections. A reflection is considered superficial when it merely describes the incident, whereas it is deemed deep if it delves into implicit meanings, challenges underlying beliefs, and evaluates implications for practice. Moon has proposed a practical approach through a grading rubric, which can be contextually adapted to suit specific assessment goals.[29] The Grading Reflective Essays (GRE) scale, consisting of nine items, is a concise, user-friendly, and reliable tool for evaluating reflective essays, with demonstrated moderate to substantial inter-rater reliability.[30] However, its potential application in public health education remains to be explored, particularly for grading reflective essays that capture students' extended exposure to programs or field experiences.

Research on reflective practice has primarily focused on identifying themes in students' descriptions,[31] analyzing student and faculty perceptions of reflections,[32] and developing assessment rubrics.[30,33] Additionally, text-data mining software has been used to examine the learning experiences of Japanese students[31] and analyze linguistic patterns in language used by students in Taiwan.[34] The use of text-data mining software for qualitative data analysis remains underexplored in routine public health practice and education, where quantitative analytic approaches continue to dominate in shaping interpretations and guiding decisions.

Challenges in developing and supporting reflective practice

The first challenge lies in motivating and training both students and faculty to develop a culture of reflective practice. Another significant difficulty involves building mutual trust and fostering a safe educational environment where students feel comfortable expressing their experiences, views, and opinions. Encouraging faculty to act as role models by demonstrating and integrating reflective practice into their professional activities adds complexity, particularly since it is often a non-visible process.

Once initiated, identifying critical incidents in public health practice often involves longer processes, and presents an additional challenge. Sustaining reflective practices and conducting periodic evaluations to ensure continuous improvement are crucial steps. In the absence of contextual evidence, advancing research to longitudinally measure outcomes—especially those that are largely intangible—emerges as a particularly intricate and demanding task.

Conclusion: Based on the existing literature, we propose eight steps for developing reflective practice in public health programs. Considering its numerous benefits, despite the several challenges, it appears to be a promising approach for fostering a culture of reflection in public health practice and for developing competent and capable public health professionals.

Table 2: Superficial and deep reflective questions for various stages of Kolb's cycle for the given scenario

Kolb's experiential stages	Levels of reflective questions	
	Superficial level	Deep level
Concrete experience	What activities did we carry out during the vaccination drive?	What were the specific interactions and responses from community members during the vaccination drive?
Reflective observation	Did we face any logistical challenges during the campaign?	What patterns or trends did we observe in the community's engagement and participation, and what underlying reasons might explain these trends?
Abstract conceptualization	How can we improve the planning for the next vaccination drive?	What cultural, social, and economic factors should we consider in our future strategies to ensure higher participation and trust in the vaccination drive?
Active experimentation	What changes will we make in the next campaign based on our experience?	How can we implement a comprehensive community engagement plan that addresses the root causes of vaccine hesitancy and fosters long-term trust and collaboration?

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