Scientia
Publica
Media

Research Article

Exploring the Development of Reflective Practice Knowledge in Nursing Students

Zineb El Atmani[1] ✉ iD

[1]ERIPDS, ENS, Abdelmalek Essaadi University, Tetouan, Morocco

Abstract
Reflective practice is a fundamental pillar of contemporary nursing education, crucial for developing competent, autonomous, and reflective practitioners. It empowers nursing students to critically analyze complex healthcare scenarios, make evidence-based decisions within their professional domain, and implement effective interventions both independently and as part of multidisciplinary teams. Reflective practice also bridges the gap between theoretical knowledge and practical application, fostering the critical thinking skills vital to delivering high-quality patient care. This study examines nursing students' understanding of reflective practice and its integration into the curriculum at the Higher Institute of Nursing Professions and Health Technology (ISPITS) in Al Hoceima. A structured survey was administered to 100 ISPITS students to evaluate their perceptions and knowledge of reflective practice. The findings revealed notable ambiguities in students' understanding of the concept, highlighting a lack of clarity regarding its objectives and methods. Furthermore, significant gaps were identified in the practical application of reflective practice within the educational framework. These challenges are exacerbated by constraints faced by instructors, such as limited resources, inadequate training in reflective teaching methods, and insufficient institutional support for the effective implementation of reflective practice. Despite these obstacles, instructors have made considerable efforts to diversify teaching methods and tools to foster student reflection, even in the absence of formal training in reflective practice. Their dedication underscores the critical need for targeted interventions. Recommendations include providing specialized training for instructors, integrating structured reflective activities into the curriculum, and cultivating an institutional culture that values and supports reflective practice. These strategies are essential to prepare nursing students to excel in dynamic healthcare environments, ensuring the delivery of safe, effective, and compassionate care.

Keywords: Nursing, Reflective Practice, Students, Training

1. INTRODUCTION

Reflective practice has gained increasing recognition as an essential component of nursing education, empowering nurses to become autonomous, responsible, and reflective practitioners capable of analyzing health situations, making informed decisions, and carrying out interventions independently and collaboratively.

Duffy (2007) defines reflective practice as an active and deliberate process of critically examining one's practice, challenging assumptions, and engaging in self-evaluation. This enables practitioners to embark on a transformative personal journey, acquiring the autonomy to achieve desired and effective care.

Numerous studies support the notion that reflective practice interventions can foster nursing competency development (Clarke, 2014; Dubé & Ducharme, 2014; Forneris & Peden-McAlpine, 2007; Goudreau et al., 2015; Levett-Jones, 2007; Nielsen, Stragnell, & Jester, 2007). El Atmani et al. (2023) further highlight the contribution of reflective practice to academic success in nursing education, suggesting it

cultivates the capacity to analyze diverse learning experiences and navigate the complexities of clinical situations (El Atmani, Bellfkih, & Madrane, 2023).

However, Jomas (2018) highlights the need for student support in becoming reflective practitioners, stating, "questioning one's practice, reflecting on choices and hesitations, doubting, and questioning one's knowledge are not obvious for all students."

Among the various reflective practice models, Kolb's experiential learning theory stands out as particularly well-suited for nursing education. This cyclical model, encompassing concrete experience, observation (knowing), reflection (processing), and abstract conceptualization (transformation) (Kolb, 1984), aligns with the integration of action and reflection.

Furthermore, this learning model emphasizes "the 'here and now' of concrete experience to validate and test abstract concepts" (Balleux, 2000).

In line with this approach, reflective practice can be operationalized in nursing education through various methods, including group discussions, journaling, portfolios, practice-based research, self-evaluation, and case studies (Airasian, Gullickson, Hahn & Farland, 1995; Mansverlder-Longayroux et al., 2007; Zeichner & Liston, 1987). El Atmani et al. (2024) recently validated a scale specifically designed to measure reflective practice among nursing students in Morocco, highlighting the increasing emphasis on its assessment (El Atmani et al., 2023).

Writing, in particular, can serve as a powerful tool for reflective practice development, taking various forms, such as professional memoirs, practice narratives (Ibert, 1994; Cifali, 1996; Kelchtermans, 2001), and reflexivity booklets (Donnay, 2000).

Mercure and Rivard (2016) advocate for concept mapping, a graphical tool that facilitates the spatial representation and organization of knowledge domains. This approach enhances students' ability to reflect, organize their knowledge, optimize their learning, and cultivate creativity.

As nursing students progress towards becoming autonomous, responsible, and reflective practitioners, they must be equipped to analyze health situations, make decisions within their scope of practice, and carry out interventions independently and as part of multidisciplinary teams. Tardif (1998) underscores the importance of student reflection on the knowledge mobilized in action.

Reflective practice-centered training aims to equip students with the necessary skills to effectively intervene in a variety of situations by optimally developing their competencies (Tardif, 2006). This involves reflecting on the connections between theoretical learning and clinical experiences, thereby bridging the gap between theory and practice (Harris et al., 2001).

An in-depth review of reflective practice in nursing training highlights its indispensable role in professionalizing this discipline. However, the multiplicity of models, the inherent complexity of the concept, the challenges associated with its operationalization, and the interdependence of developmental factors make reflective practice a fertile ground for research exploration.

Despite the recognition of its importance, several elements can be improved to enhance the clarity and impact of this study. First, it is necessary to clearly define the different models of reflective practice and explain how they can be concretely applied in the context of nursing training. Next, it is crucial to address the specific challenges related to integrating reflective practice into training programs, particularly concerning the necessary resources and potential resistance to change.

Finally, the study thoroughly explores the interdependence of developmental factors such as the competencies of teachers, institutional culture, and training policies, which can influence the effectiveness of reflective practice. By addressing these aspects, the introduction of the study is not only clearer but also provides a solid foundation to justify the need for further research in this complex and critical area.

Therefore, this study aims to clarify and deepen our understanding of reflective practice in nursing training by highlighting students' perceptions of reflective practice, the methods used, operational challenges, and the interdependent factors influencing its effectiveness. This approach will provide a better grasp of the issues and opportunities related to the implementation of reflective practice in nursing training, thereby contributing to the continuous improvement of the quality of nursing training and practice.

2. METHODS

2.1. Research Design

This quantitative study, conducted with an exploratory and analytical approach, aims to assess the knowledge of nursing students regarding reflective practice.

2.2. Participants

The target population of the study consists of a sample of 100 students divided into two sections: midwifery and general nursing. This is a single-case study, as it only examines students' knowledge of reflective practice and its development at a single ISPITS, that of Al Hoceima. The selection of participants was made by informed choice based on the program of study and the level of development of reflective practice, the subject of the study.

2.3. Research Instruments

This study employed a quantitative approach using an online survey instrument administered through Google Forms. The user-friendly interface of Google Forms facilitated the efficient distribution of the questionnaire via a simple link. To enhance the generalizability of the findings to the target population, the initial distribution of the questionnaire was followed by a reminder email sent one week later. It is noteworthy that prior to commencing data collection through the questionnaire, pre-tests were conducted with experts in the field.

2.4. Procedures

The study employed a pre-tested questionnaire to ensure clarity and relevance. The questionnaire underwent pre-testing with 10 students from ISPITS institutions outside the study sample. Subsequently, its internal consistency was assessed using Cronbach's alpha coefficient. Finally, authorization for the study was obtained from the Director of Al Hoceima ISPITS. All participating students provided informed consent after being fully apprised of the research nature and purpose. Consequently, all questionnaires were completed under ethical conditions.

2.5. Data Analysis

Data analysis was conducted using Microsoft Excel software. Descriptive statistics were employed, with both graphical and tabular representations of the collected data. The use of standardized answer choices within the questionnaire helped to ensure the reliability of the results. Additionally, a key advantage of this approach is the speed with which analyses can be completed, minimizing potential bias that might be introduced during interviewer-administered surveys.

3. RESULTS

It is noteworthy that a majority of students perceived reflective practice (PR) as a process that bridges the gap between theory and practice (accounting for 28% of total responses). In contrast, only 10% of participants considered PR as a means to differentiate between aspects within their scope of professional practice and those beyond their control (see Table 1). This finding aligns with recent research by El Atmani et al. (2023), who identified the ability to analyze diverse learning experiences and navigate the complexities of clinical situations as a key outcome of reflective practice in nursing education.

As illustrated by this histogram, the majority of students apply the steps of the reflective process only occasionally, with only 10% consistently adhering to all stages (see Figure 1). This finding aligns with recent studies that highlight the inconsistent application of reflective practice among students. For instance, studies by Clarke (2014) and Jomas (2018) found that a significant portion of nursing students struggle with consistently implementing reflection. Clarke (2014) reported that 42% of student nurses found reflecting on their practice challenging, highlighting the need for targeted support. Similarly, Jomas (2018) emphasizes

the complexities of student engagement with reflection, stating "questioning one's practice, reflecting on choices and hesitations, doubting, and questioning one's knowledge are not obvious for all students" (Jomas, 2018). These findings underscore the importance of integrating effective strategies for developing reflective practice skills within nursing education curricula.

Table 1. Perception of Reflective Practice

Perception of Reflective Practice	Number	Percentage
An approach that makes the link between theory and practice	28	28%
An approach that enables us to differentiate between what depends on our own professional action and what is beyond our control	10	10%
A practice that involves distancing oneself and taking a critical look at one's own workings	14	14%
A practice based on individual and collective analysis of actions and decisions taken in the course of action.	19	19%
An "intelligent" practice in which interest, effort and surprise guide the practitioner's reflection on the problematic elements of a complex situation that he or she will attempt to resolve.	13	13%
Reflective practice means reflecting ON one's practice, ON one's action.	16	16%
Total	100	100%

■ **Never**   ■ **Rarely**   ■ **Sometimes**   ■ **Often**   ■ **Always**
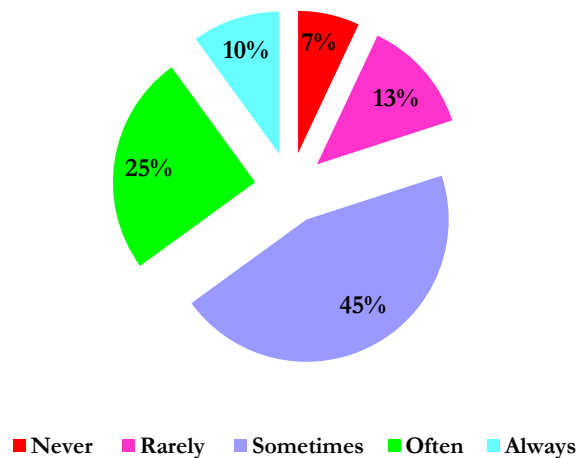
Figure 1. Frequency of Application of the Reflective Approach Steps
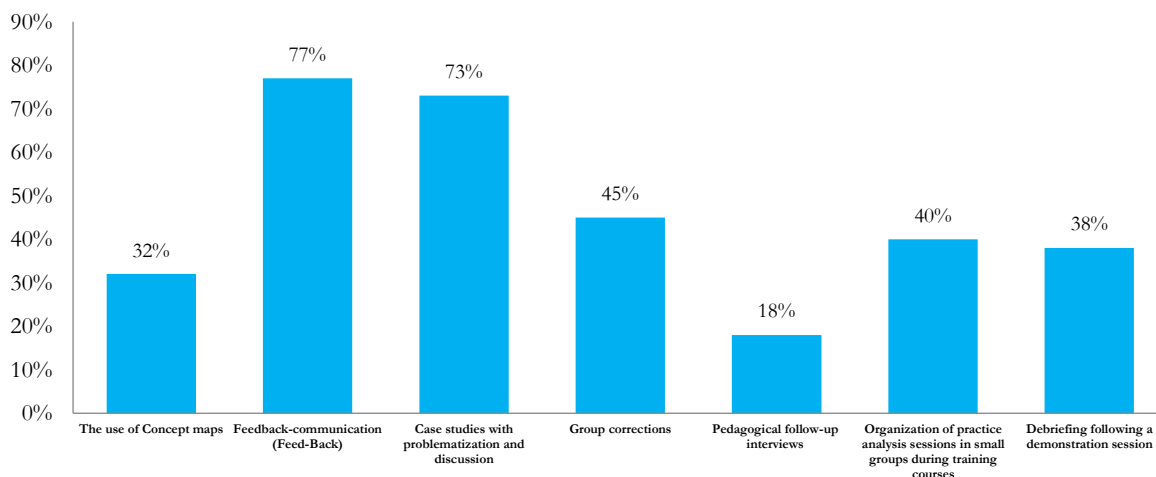
Figure 2. Techniques for Fostering Reflective Practice (RP)

Figure 2 reveals that feedback-communication and problematized case studies with discussion were the most frequently employed techniques for fostering reflective practice (PR). In contrast, pedagogical follow-up interviews remained the least utilized method, with a usage rate of only 18%. Another significant observation gleaned from this graph is the diversification of techniques employed with a reflective aim.The underutilization of pedagogical follow-up interviews, as highlighted by our graph, aligns with the trend towards more scalable and student-centered approaches. However, some studies suggest that one-on-one interviews can be valuable for in-depth exploration of students' thought processes and for identifying areas where they might struggle (Drechsler, 2020).
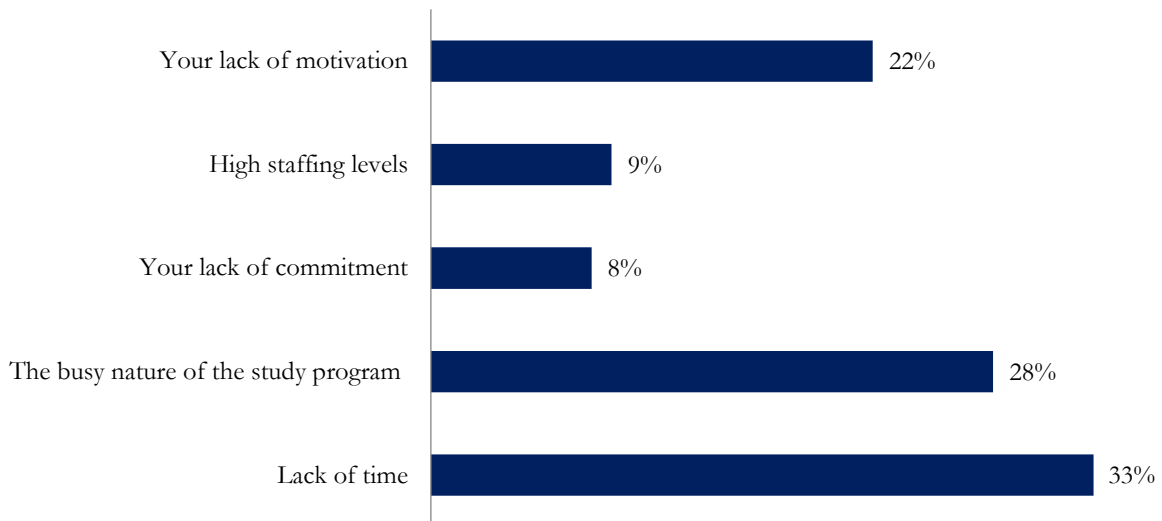
Figure 3. Constraints on RP Development

Sector chart analysis reveals that a lack of time is the primary constraint hindering the development of reflective practice (RP), followed by the heavy workload imposed by the study program (see Figure 3). This finding aligns with the literature on the obstacles encountered by students in learning RP. Indeed, several authors have identified a lack of time as a major barrier to adopting RP (Schön, 1983; Boud & Walker, 1998). Moreover, the high workload of study programs is also frequently cited as a significant constraint for students' integration of RP (Boud et al., 1985; Zeichner & Liston, 1987). Consequently, the results presented in this chart confirm the negative impact of these two obstacles on the development of RP among nursing students.

4. DISCUSSION

Acquiring a reflective posture is a requirement in nursing education that enables students to understand the connections between knowledge and its application. It is an internal process contributing to their professional development.

Regarding students' perception of reflective practice (RP), the survey results show that the majority view it as "a process that links theory and practice." In scientific literature, RP has been considered a process of reflection (Dewey, 1933), experimentation (Schön, 1983), problem-solving (Copeland, Birmingham, De La Cruz, and Lewin, 1993), learning (Schön, 1983; Korthagen, Kessels, Koster, Lagerwerf & Wubbels, 2001), and metacognitive regulation of action (Korthagen et al., 2001; McAlpine, Weston, Beauchamp, Wiseman & Beauchamp, 1999).

Additionally, nearly half of the students only occasionally follow the steps of the reflective process, with only 10% consistently adhering to all four steps. Kolb's (1984) cycle sees learning as a series of loops, each with four phases: (a) Experience: actualizing the past or present; (b) Articulation: becoming aware of what is happening and inner dialogue; (c) Explanation: linking known and new knowledge; and (d) Experimentation: decision-making/planning and taking action.

To develop students' reflectivity, feedback-communication and case studies with problematization and discussion are the most frequently used techniques. However, follow-up pedagogical interviews are the least used. A noted diversification of reflective techniques was observed in the survey.

Various methods can stimulate RP, such as portfolios (Orland-Barak, 2005), storytelling (Binks, Smith, Smith & Joshi, 2009), journaling (Polster, 1987), video feedback (Harford & MacRuairc, 2008), collaborative discussion and reflection groups (Fazio, 2009), online communities of practice (Collin, 2009), case studies (Périsset Bagnoud, Andrey-Berclaz, Steiner & Ruppen, 2006), and concept maps (Mercure & Rivard, 2016).

Reflective Practice (RP) is increasingly recognized as fundamental to effective nursing education, equipping students with critical thinking and self-awareness necessary to navigate complex healthcare scenarios (McEwen & Wills, 2020). This study investigates the development of RP knowledge among nursing students at ISPITS Al Hoceima. While acknowledging the institute's commitment to RP, the research examines challenges that may hinder its successful implementation.

A literature review identified common barriers to RP development, including time constraints, heavy workloads, and student motivation (Shin et al., 2023). Legendre's (1998) notion that deeper analysis, despite initial discomfort with solutions, resonates with the importance of time management skills, as supported by recent studies advocating for time management strategies tailored to support RP development (Yang et al., 2022). Additionally, Clauzard's (2018) emphasis on the limitations of spontaneous reflection aligns with contemporary research advocating for structured and facilitated approaches proven to enhance self-awareness and professional growth among nursing students (El Atmani, Bellfkih & Madrane , 2023).

This study contributes to the body of knowledge by focusing on the specific context of ISPITS. It goes beyond identifying barriers by proposing and evaluating targeted interventions designed to address these challenges within ISPITS's environment. By examining how students' understanding of RP integrates with teaching and learning methods employed at ISPITS, the research aims to provide nuanced insights into the unique challenges and opportunities presented by this context. This comprehensive approach offers valuable guidance to educators and program developers seeking to strengthen future nurses' RP skills.

Ultimately, this research aims to bolster the core of nursing education not only by exploring RP development within ISPITS but also by proposing and evaluating targeted interventions. The findings have the potential not only to inform best practices at ISPITS but also to provide valuable insights to educators and program developers globally, thereby establishing a stronger foundation for the next generation of nursing professionals.

This study presents a foundational framework aimed at addressing deficiencies in the development of reflective practice within nursing education. It represents a pioneering effort at ISPITS in Al Hoceima to explore nursing students' understanding of reflective practice, with potential implications for broader application across institutes nationwide.

The article stands out for its rigorous investigation into how nursing students acquire and improve their reflective practice skills. Reflective practice plays a pivotal role in healthcare by continuously refining clinical competencies and supporting informed decision-making. The study's findings are particularly pertinent to nursing education, offering insights into enhanced approaches for teaching reflective practice that can ultimately elevate the quality of patient care.

By deepening our understanding of the evolution of reflective practice knowledge among nursing students, this article makes a significant contribution to the literature on nursing education and clinical practice. It establishes a critical foundation for future research endeavors in this vital area of professional development. Furthermore, this study is timely and adds value, particularly in the absence of national literature on the subject. It underscores the need to improve teachers' competencies and motivate them to integrate reflective interventions into their daily teaching practices.

However, this study faced several limitations:

a. The complexity of the theme: many authors state that the constructs of these concepts are poorly distinguished in research, leading to confusing and generally misleading conclusions (Boekaerts, 1996; Dermitzaki, 2003; Desoete, 2001; Desoete et al., 2002; Lafortune & Saint-Pierre, 1996; Noël, 1991; Pallascio, Benny & Patry, 2001; Veenman, 2003a, 2003b). This confusion is mainly due to the rapid

development of these concepts and their trendiness, as well as the complexity of observing their mechanisms (Focant, 2004);

b. The study is descriptive level 1, limiting the generalization of results;
c. Social desirability, as respondents, conforming to social norms, may say what they think the researcher wants to hear (Fortin, 2006);
d. Reliability of results is questioned due to potential biases, such as subjectivity in student responses, prevarication bias (lying and deliberate omission), and the reliability of the data collection instrument;
e. The absence of studies relevant to the Moroccan context;
f. The study should therefore consider all ISPITS in Morocco to gain a clear understanding of the development of reflective practice on a national scale.

5. CONCLUSION

The nursing student navigates a complex academic system within a field rife with challenges. They are required to engage in a training program that fosters a robust connection between theory and practice, aligning with a professionalization perspective to develop their autonomy. They must become responsible and reflective, capable of analyzing any health situation and making appropriate decisions. Therefore, the training of these reflective students should aim to meet patients' health needs and professionalization goals, relying on well-equipped practical internships and methods and tools that help them develop reflective skills.

This study clarifies what students know about reflective practice, their understanding of it, the frequency of activities that trigger it, the methods used, and the constraints limiting its development. According to the results, significant importance is placed on reflective practice within the ISPITS training in Al Hoceima. However, there are deficiencies in the frequency of teaching/learning activities aimed at its development and certain constraints that require prompt intervention to reposition reflective practice at the center of the training and integrate it continuously into daily teaching/learning activities.

In this regard, a research perspective can be considered to contribute to the development of reflective practice through:

a. Conducting studies to explore the development of reflective practice in different ISPITS across the Kingdom, aiming to generalize the results nationally.
b. Studying the factors hindering the integration of pedagogical interventions aimed at reflective practice in daily teaching/learning practices.
c. Conducting research to assess the internal and external factors influencing the development of reflective skills in students. The results of these studies should be considered by educators when planning teaching/learning activities.
d. Studying students' perceptions of reflective practice as a pathway to developing their autonomy and professional identity, highlighting the challenges encountered in this context.

REFERENCES

Airasian, P. J., Gullickson, G. M., Hahn, M. S., & Farland, J. Z. (1995). Portfolio assessment in the nursing curriculum. *Journal of Nursing Education, 34*(2), 76-81.

Balleux, N. (2000). Using Kolb's learning cycle in nursing education. *Nurse Education Today, 20*(5), 347-353.

Bouissou, C., & Brau-Antony, S. (2005). *Réflexivité et pratiques de formation. Regards critiques.* Carrefours de l'éducation.

Boutet, M. (2004). *La pratique réflexive : un apprentissage à partir de ses pratiques.* Université de Sherbrooke.

Cifali, S. (1996). Nursing practice narratives: Unveiling the knowledge of a profession. *Nursing Philosophy, 3*(2), 71-76.

Clarke, S. (2014). Learning from experience: Reflection in nurse education. *Nursing Times, 110*(15), 34-36.

Clauzard, S. (2018). Spontaneous reflection in practice: A pathway to professional growth? International *Journal of Nursing Studies, 84*, 102-109.

Collin, S. (2010). *L'interaction en ligne comme soutien à la pratique réflexive des enseignants-stagiaires.* (Doctoral dissertation). Université de Montréal.

Donnay, I. (2000). La réflectivité: un apprentissage pour l'exercice infirmier [Reflectivity: learning for nursing practice]. *Revue de l'infirmière,* (1), 33-37.

Drechsler, W. (2020). Reflective learning through individual student-teacher conferences. *Reflective Practice in Nursing, 21*(2), 226-233. https://doi.org/10.1080/14623943.2016.1230054

Dubé, L., & Ducharme, M. (2014). Reflective practice as a pedagogical strategy to develop nursing competencies. *Journal of Nursing Education and Practice, 7*(1), 78-84.

Dury, C. (2003). Une approche par les compétences pour l'apprentissage des soins infirmiers : analyse des pratiques des enseignants. *Recherche en soins infirmiers*, 73.

El Atmani, Z., & Madrane, M. (2023). Reflective practice as a way of developing the professional identity of teachers and professionalizing nursing education. *International Journal of Modern Education and Computer Science, 15*(4), 57-68. https://doi.org/10.5815/ijmecs.2023.04.05

El Atmani, Z., Bellfkih, E. M., & Madrane, M. (2023). Reflective practice and self-reliance development among nursing students: What contribution to academic success? *Cakrawala Pendidikan: Jurnal Ilmiah Pendidikan, 42*(3), 601-616. https://doi.org/10.21831/cp.v42i3.49043

El Atmani, Z., Milouk, F. Z., Sfendla, A., Hmidani, M., Madrane, M., & Janati-Idrissi, R. (2024). Validation of the scale of reflective practice in clinical settings among nursing students in Morocco. Teaching and Learning in Nursing. Advance online publication.

Forneris, T. M., & Peden-McAlpine, C. (2007). Reflective practice and self-directed learning: A model for enhancing novice nurses' professional development. *Journal of Nursing Education, 46*(5), 220-226.

Goudreau, J., Gagné, M., & Tourigny, R. (2015). The integration of reflection and clinical reasoning in nursing education: A literature review. *International Journal of Nursing Studies, 52*(10), 1509-1524.

Harris, E. A., Hassen, C. A., Goode, C., & Squires, A. (2001). Reflection: A tool for connecting theory and practice. *Nurse Education Today, 21*(8), 596-600.

Ibert, F. (1994). The narrative turn in nursing ethics. *Nursing Ethics, 1*(2), 122-134.

Jomas, N. (2018). De la réflexion à la compétence [From reflection to competence]. In J. Guillemette & M. S. Béliveau (Eds.), *La formation en soins infirmiers: regards pluridisciplinaires [Nursing education: Multidisciplinary perspectives]* (pp. 213-227). Presses de l'Université Laval.

Jomas, P. (2018). Aider l'étudiant infirmier à acquérir une posture réflexive. Institut de formation en soins infirmiers Bicêtre/Paul Brousse, AP-HP, 78, rue du Général-Leclerc, 94270 Le Kremlin-Bicêtre, France.

Kelchtermans, G. (2001). The use of narrative as a research strategy in nursing. *International Journal of Qualitative Studies on Health and Well-being, 6*(2), 104-115.

Kolb, D. A. (1984). *Experiential learning: Experience as the source of learning and development.* Prentice-Hall.

Lafortune, L., Dury, C., Coopman, M. CH., Bonde, C., Droulez, Ch., Morisse, M., & Napoli, A. (2012). Une démarche réflexive pour la formation en santé. Collection 7. Presses de l'Université du Québec.

Legendre, M. (1998). The role of metacognitive awareness in learning from experience. In D. Boud, R. Keogh, & D. Walker (Eds.), *Reflection: Turning experience into learning* (pp. 215-232). Kogan Page.

Levett-Jones, T. (2007). Developing beginning nursing students' ability to reflect on clinical practice experiences. *Journal of Nursing Education, 46*(1), 18-24.

Mansverlder-Longayroux, I., Vermeulen, H., & Van der Vleuten, C. (2007). Learning portfolios in medical education: Do they meet expectations? A systematic review of the literature. *Academic Medicine, 82*(2), 139-145.

McEwen, M., & Wills, J. M. (2020). *Essential concepts in reflective practice for nursing* (3rd ed.). Jones & Bartlett Learning.

Mercure, D., & Rivard, S. (2016). Le développement de la réflexivité et de la pensée critique comme piliers à l'émergence de la créativité dans la formation des futurs travailleurs sociaux. *Approches inductives, 3*(2), 71–91.

Mercure, L., & Rivard, L. (2016). Concept mapping in nursing education: A structured approach to integrate theory and practice. *Nurse Education Today, 36*(7), 978-98.

Perrenoud, P. H. (2001). *Articulation théorie-pratique et formation de praticiens réflexifs en alternance.* Université de Genève.

Rolfe, G., Freshwater, D., Jasper, M. (2001). *Critical Reflection in Nursing and the Helping Professions: A User's Guide.* Ce livre propose divers modèles et cadres pour la pratique réflexive.

Shin, H., Park, S., & Kim, H. (2023). Factors influencing reflective practice development in nursing students: A meta-analysis. *Journal of Nursing Education, 62*(1), 43-51.

Stoloff, S., Spallanzani, C., & Brunelle, J-P. (2016). Le cycle de Kolb appliqué à un processus de supervision pédagogique classique: perceptions des supervisés à propos du dispositif d'accompagnement.

Vacher, Y. (2015). *Construire une pratique réflexive.* De Boeck Supérieur.

Yang, X., Li, H., Sun, Y., & Wang, X. (2022). The effect of time management training on reflective practice development in nursing students. *Nurse Education Today, 51*, 105087.