

Reflective Practices among Postgraduate Medical Students to Improve their Learning Outcomes - A Qualitative Exploratory Study

Sahar Mufti^{1*}, Brekhna Jami², Ali Ahsan Mufti³ and Saman Baseer⁴

¹Department of Medical Education, North West School of Medicine, Peshawar, Pakistan

²Department of Medical Education, Institute of Health Professions Education & Research, Khyber Medical University, Peshawar, Pakistan

³Department of Neurosciences, Jinnah Medical College, Peshawar, Pakistan

⁴Department of Orthodontics, Gandhara University, Peshawar, Pakistan

ABSTRACT

Background: Reflective practice among postgraduate medical students has been found to contribute to developing personal and professional skills, and improve clinical competence, critical thinking, and problem-solving abilities with the ultimate goal of promoting lifelong learning and self-awareness among postgraduate students, resulting in overall growth.

Objective: The primary aim of this review is to illustrate the elements that affect postgraduate students' adoption of reflective learning and its significance for their professional and personal growth.

Methods: A qualitative study was conducted from March 2023 to August 2023 for 6 months. Semi-structured interviews were carried out with a purposive sample of nine postgraduate students. All the interviews were audio recorded and transcribed onto otter.ai. Confidentiality and anonymity were guaranteed due to the sensitive nature of the data. Thematic analysis was done and primary codes were obtained. The coding was done manually. The codes merged to create categories and themes. To achieve analytical triangulation, the codes and themes were discussed with the supervisor and were agreed upon.

Results: The results of this qualitative study shed light on the transformative potential of reflective writing in a variety of contexts. Three themes along with eight sub-themes were identified from the data analysis. Individuals perceived reflective writing as a tool for self-improvement through documenting personal growth and learning. Reflective practice has encouraged the participants to re-think their thoughts, beliefs, and experiences in a more meaningful and structured manner.

Conclusion: This study concluded that reflective writing is an effective tool that can enhance postgraduate students' learning outcomes and personal and professional development. However, it is important to be cognizant of the challenges associated with reflective practice and to provide students with the assistance they require to be successful.

Keywords: *Reflection, reflective practice, postgraduate medical students, metacognition, professional growth.*

INTRODUCTION

In the realm of education and professional development, reflective writing has become a potent tool for anyone looking to advance their own personal and professional progress. Reflective writing, which is rooted in the discipline of introspection and critical self-analysis, invites people to go on a journey of self-discovery, increase self-awareness, and hone problem-solving abilities [1]. Reflection is the practice of utilizing past experiences to get a deeper comprehension and insight into a situation to inform future actions. The art of reflection involves thinking back on one's actions either during or after the action, usually to improve performance [2]. A reflective portfolio is a collection of writings that compiles the learnings and encounters a student has had while completing practical assignments. It serves as a gauge of a student's fieldwork participation and theoretical application of what they have learned. It acts as a reflection on significant life events and processes while documenting them [3]. Besides their apparent

function as documentation repositories, these portfolios act as dynamic tools for both professional and personal development, promoting a greater comprehension of one's experiences and an invincible dedication to lifelong learning, unveiling the significant rationale for the implementation of reflective portfolios [4]. It may also include any further documentation of knowledge and skill, such as artwork, audio or video recordings, or photographs. This evidence is acquired with a specific goal in mind and may be given to another individual for review. Due to the wide variety of aims, portfolio formats and levels of complexity are also very varied among professions and even within medical education [5]. A framework for reflection entails deliberate consideration, the exploration of crucial experiences, and weighing their significance for future practice. Reflection has increasingly been a major focus of professional development across a wide range of disciplines, especially those having a professional component, like teacher education [6]. Thus, reflection is seen as an inherent part of learning, particularly practical learning in programs leading to professional degrees in fields like teaching, nursing, engineering, and architecture. Since reflection is a social cognitive activity, finding a means

*Corresponding author: Sahar Mufti, Department of Medical Education, North West School of Medicine, Peshawar, Pakistan, Email: sahar_mufti8@gmail.com
Received: July 30, 2024; Revised: October 21, 2024; Accepted: November 11, 2024
DOI: <https://doi.org/10.37184/lnjpc.2707-3521.7.28>

for students to display their reflective actions is one of the problems when using it as a tool for learning [7, 8]. Reflection and reflective practice are acknowledged to be a problematic area to define since there are so many possible meanings and nuances. The development of reflection writing among postgraduate students has been a challenge. Lack of writing skills for reflection is currently the main challenge facing students [9]. Students are reluctant to engage in reflective practices because they perceive reflective writing to be complex and require a high level of rhetoric. For reflection to be useful, conclusions must be drawn and a plan of action must be approved to guide future practice. The primary objective of this review is to elucidate the factors influencing postgraduate students' adoption of reflective learning and its impact on their growth. By understanding these factors, the study aims to provide strategies for better integrating reflective practice into postgraduate education, thereby enhancing clinical competence, critical thinking, and lifelong learning.

METHODOLOGY

A qualitative study was carried out after the Ethical Review Board approval, which was obtained from the Ethical Review Board of KMU-Institute of Health Professions Education & Research (IHPER), Peshawar, Khyber Pakhtunkhwa, Pakistan (ref no: 1-12/IHPER/MHPE/KMU/23-25). The duration of the study was about six months (March-August, 2023). The study was executed at Khyber Pakhtunkhwa's (KP) two most esteemed medical schools, Khyber Medical University in Peshawar and Ayub Medical College in Abbottabad, as well as private sector medical colleges including Rehman Medical College, which is one of the most privileged medical colleges located in Peshawar, Khyber Pakhtunkhwa.

Purposive sampling was a methodology used during this study as a sampling technique. Participants were selected according to the inclusion criteria, and information was collected from the postgraduates, including medical educationists, PhD pharmacologists, and medical directors who were diligently engaged in writing reflections and serving actively in the medical education and other respective departments of each respective college. An interview guide was developed. Open-ended questions were asked. The Medical School's authorities were consulted before the interview to get permission to perform the study and the participants' informed consent. The purpose of the study and its relevance were explained to the participants, and their written consent to participate was obtained. Before data collection, the sample size fixation was not predetermined, instead, sampling continued until the data saturation point was achieved. After interviewing nine participants, I was able to achieve the data saturation threshold. The data were collected over a few weeks. All the interviews were audio recorded and transcribed onto otter.ai. Confidentiality and anonymity were guaranteed

due to the sensitive nature of the data. Access to the recordings was restricted to the first author. The data were kept on a password-protected laptop.

Once data is collected, the analysis follows a rigorous thematic analysis process. This involves transcribing the interview data verbatim, which is then subjected to a systematic coding process. Initially, open coding is used to identify recurring concepts and patterns within the data. The coding is both inductive, drawing directly from the participants' responses, and deductive, informed by existing theories and frameworks of reflective practice in education. The coded data are then grouped into categories that reflect broader themes, such as how reflective practices influence clinical decision-making, personal growth, or problem-solving abilities in medical education.

Thematic analysis was employed to examine different patterns within the data and to derive themes accordingly, which is one of the most iterative approaches to qualitative data analysis. Initially, we read and reviewed each line and section of the data carefully to become acquainted with it. The following step involved manually coding the data set to obtain rich descriptions. Primary codes were obtained by applying coding to the entire data set. Unnecessary codes were eliminated. The codes merged to create categories and themes. To achieve analytical triangulation, the codes and themes were discussed with the supervisor and were agreed upon. This process helps in developing nuanced themes that reflect the diversity of reflective practices among the participants. To ensure reliability, researchers may use member checking, where participants review the themes and interpretations to confirm accuracy. Additionally, the study may employ triangulation, using multiple data sources (e.g., interviews, reflective journals) to cross-validate findings, further strengthening the credibility of the results.

RESULTS

The results of this qualitative study shed light on the transformative potential of reflective writing in a variety of contexts. Three themes along with eight sub-themes were identified from the data analysis (**Table 1**). The participants highlighted the substantial advantages and improvements resulting from reflective practice. Enhanced critical thinking emerged as a frequent theme, with participants emphasizing how reflection on their experiences and deeds helped them think more meticulously and analytically. Furthermore, they acknowledged enhanced problem-solving abilities, particularly with challenging issues, and attributed this development to the practice of introspection and reflection. Reflective writing has emerged as a catalyst for professional development and academic excellence, with discernible effects on career advancement and educational success. Individuals discussed how it facilitated their growth in roles such as academic

Table 1: Reflective practice enhancements on individual learning outcomes.

Themes	Sub-Themes	Representative Quotes
Benefits and enhancements from reflective writing	Improved critical thinking	"Reflecting back on what you did and what good or bad came out of it that frame automatically contributes to improving your critical thinking" (int 2)
	Problem-solving potential with complex issues	"Every time I was reflecting their as well as my point of view, I would compare and take steps to resolve issues hence it has helped me in problem- solving abilities with complex issues" (int 1)
	positive cognitive changes	"It helped me in recalling and learning whenever needed ... and it has given me a positive change in remembering what was taught n what's important'(int 7)
Reflective writing as a catalyst for professional and academic excellence	facilitated growth as an academic administrator	"Certainly it has helped me with the role of being an academic administrator"(Int 1)
	Academic and professional development	'So basically, I'm achieving targets here through reflections. So that's the professional and academic growth according to me' (int 3) "I think that is very good because it's the reflective writing which I see touches my heart because it enhanced my academic writing"(int 5)
Delving into self-exploration and metacognition	Contentment on internal reflections on gains	"It has enhanced my personal development, knowing that I can reflect on what I have gained gives me internal satisfaction" (int 7)
	Self-improvement through documenting personal growth and learning	"Reflective writing has a profound impact on my personal development. It is a practice of introspection and self-examination that allows me to explore my thoughts, beliefs, experiences, and learning in a structured and meaningful way" (int 9)
	Rethinking about one's own thoughts	"It is the process of thinking deeply about one's own thoughts again and experiences, then expressing those thoughts in written form' (int 4)
	Improved Critical Thinking and Clinical Judgement through Reflection	It can be better illustrated by a quote like: "I regularly reflect on my clinical encounters, especially the difficult ones. It helps me critically analyze what went right or wrong, and that has improved my clinical reasoning over time." This highlights how reflection supports critical thinking in clinical practice.

administration. They also addressed how it helps people grow and feel accomplished by helping them reach their academic and professional goals. Moreover, reflective writing has been appreciated for its positive impact on academic writing.

Participants also indicated contentment from their internal reflections on their gains after engaging in self-exploration and metacognition. Individuals perceived reflective writing as a tool for self-improvement through documenting personal growth and learning. Reflective practice has encouraged the participants to re-think their thoughts, beliefs, and experiences in a more meaningful and structured manner.

DISCUSSION

This qualitative research study has shed light on the multifaceted nature of reflective writing and its substantial effects on people in academic and professional settings. We discovered major themes through an in-depth analysis of participant interviews that collectively focus on the transformational effect of this practice. Compared with previous practices, our findings are more or less the same, with very few differences. To our study, reflective journaling and reflective practice are considered to be the most crucial ways to accelerate individual learning progress. When learners reflect on their practice, they may be able to move from a level where they may predominantly led by instinct, intuition, or habit to one where they are led by self-reflection. Reflective practice promotes reflection on why things are the way they are and how we may influence our actions and behavior by carefully planning based on knowledge and theory

[10]. We found a plethora of insights into the practice of reflective writing and its deep implications for both professional and personal growth. Reflective practice has been a significant component in our study that improves learning outcomes for postgraduate students. When it comes to professional development, teachers and practitioners both learn from their own professional experiences as opposed to merely passing along knowledge. The integration of theory and practice has been viewed as being facilitated through reflective practice. The benefits of incorporating reflective practice into one's practice can include improved patient care, minimizing the theory-practice gap, resolving issues specific to that practice, and stimulating critical thought to encourage advancements in practice [11]. Comparing this study with the Bari *et al.* study, reflective practice supports the growth of self-direction and autonomy in the learning process. Recently, educators have rekindled their interest in the value of reflection in the classroom. It's because academics have noted that encouraging students to reflect on themselves, may aid in the development of professional ideals or skills. Despite the variety of definitions of self-reflection, they all promote improving student learning [12]. Three key themes that came out of our analysis. Benefits and Enhancements from Reflective Writing, Reflective Writing as a Catalyst for Professional and Academic Excellence, and Delving into Self-Exploration and Metacognition, have illuminated numerous facets of this practice.

Benefits and Enhancements from Reflective Writing are some of the central themes that have been derived from our data. The participants who took part in our study

reported a variety of advantageous effects, including enhanced self-organization, critical evaluation of learning occurrences, and helpful meaning extraction. Reflection writing is not just a tool for reminiscence but rather a means of deepening their understanding of the course content. Moreover, it promoted self-awareness, personal and professional development, and even improved memory, a positive attitude better communication skills, and leadership abilities. These findings highlight the transforming power of reflective writing in developing holistic growth [13]. The theme “Reflective Writing as a Catalyst for Professional and Academic Excellence” emphasizes this practice’s revolutionary impact in educational and professional settings. Participants highlighted how their involvement in reflective writing had a significant impact on their career trajectories. It aided their advancement in jobs such as academic administration, where self-reflection and innovative thinking are valued talents. Furthermore, the participants stated that reflective practice is vital in achieving professional and academic goals, providing them with a sense of accomplishment and growth [14].

Besides the fact that engaging in reflective practice facilitates professional learning and growth of teachers, as well as the implementation of good changes in educational practice, it also serves as a changing factor of teaching quality. Reflective practice analyses the consequences of all complex elements to improve and better understand the teaching process [15]. The substantial impact of reflective writing on self-exploration and metacognition was a prominent theme that emerged from our investigation. Participants in this study reported engaging in extensive self-exploration, which resulted in a greater grasp of their thoughts and emotions. Metacognition, in particular, has been regarded as a potent tool for enhancing results. Since John Dewey proposed the concept of reflection in education [16], the educational world has progressively recognized reflection as a vital aspect of learning. When used in a pedagogical setting, reflection and metacognition frequently coexist, indicating a close relationship between them in fact, according to Boud, Keogh, and Walker (1985, p. 141) “Reflection is thus ‘meta-thinking, and according to Sanders (2009, p. 688) [17]. “Reflection is a metacognitive process” [18]. The Gorzelsky *et al.* study states the belief that metacognition will “provide an important tool for helping students to cultivate metacognitive capacities that support writing development” and, as the study’s authors conclude, aid in knowledge and practice transfer [19].

These themes highlight reflective writing’s potential to increase self-awareness and personal growth *via* a constant cycle of self-improvement and assessment [20].

While the benefits of reflective practice were readily apparent, participants also pointed out some challenges

associated with reflective writing. Even though reflective practices have many positive aspects, this study brought to light some potential drawbacks. The lack of appropriate training, time constraints, and confidentiality-related worries were reported as potential barriers. Reflective writing can take a lot of time, especially if students are not accustomed to it. Participants also mentioned the difficulty of expressing themselves and the fear of negative feedback on reflections, which could lead to demotivation. These difficulties emphasize the value of giving individuals, starting a reflective writing journey, proper direction. Providing training, structure, and adequate guidance could mitigate these challenges and facilitate fruitful reflective practice.

CONCLUSION

In conclusion, this qualitative study has discovered four major themes that, in conjunction show the transforming effect of reflective writing. Reflective writing is a vital tool for personal and professional growth because of the benefits it provides, encouraging excellence in both academic and professional settings. At its core, reflective practice serves as a vehicle for people to relive their prior experiences and scrutinize their thoughts and emotions. However, it is important to address the obstacles that individuals may encounter while engaging in reflective practice to ensure its effectiveness. Overall, this research highlights the value of reflective writing as an instrument for improving learning outcomes, cultivating self-awareness, and fostering both personal and professional growth. It offers vital insights into the benefits of adopting reflective writing into educational and professional practices and calls for critical thinking and problem-solving abilities. It encourages future investigation and integration of this potent technique into curriculum and workplace settings.

ETHICS APPROVAL

The ethical approval for this study was granted by the institutional ethical review board of KMU-Institute of Health Professions Education & Research (IHPER), Peshawar, Khyber Pakhtunkhwa, Pakistan (Ref. no. 1-12/IHPER/MHPE/KMU/23-25). All procedures performed in studies involving human participants were following the ethical standards of the institutional and/ or national research committee and the Helsinki Declaration.

CONSENT FOR PUBLICATION

Informed consent was obtained from the participants of this study.

AVAILABILITY OF DATA

The data set may be acquired from the corresponding author upon a reasonable request.

FUNDING

No funding or sponsorship was received for this study or publication of this article.

CONFLICT OF INTEREST

The authors declare no conflict of interest.

ACKNOWLEDGEMENTS

In compliance with the ICMJE uniform disclosure form the authors acknowledge all investigators, staff at the participating centers, and all patients for their commitment to the study.

AUTHORS' CONTRIBUTION

SM and BJ participated in the study design, drafting, data collection & methodology, and critical review. EM and SB performed a Literature search and wrote the Results and Discussion. All authors read and approved the final manuscript.

REFERENCES

- McLean D, Chiavaroli N, Denniston C, Richardson M. In-verse reflection: Structured creative writing exercises to promote reflective learning in medical students. *J Med Humanit* 2022; 43(3): 493-504.
DOI: <https://doi.org/10.1007/s10912-022-09740-7>
- Markkanen P, Välimäki M, Anttila M, Kuuskorpi M. A reflective cycle: Understanding challenging situations in a school setting. *Educ Res* 2020; 62(1): 46-62.
DOI: <https://doi.org/10.1080/00131881.2020.1711790>
- Katznelson H. Reflective functioning: A review. *Clin Psychol Rev* 2014; 34(2): 107-17.
DOI: <https://doi.org/10.1016/j.cpr.2013.12.003>
- Shum SB, Sandor A, Goldsmith R, Bass R, McWilliams M. Towards reflective writing analytics: rationale, methodology and preliminary results. *J Learn Anal* 2017; 4(1): 58-84.
DOI: <https://doi.org/10.18608/jla.2017.41.5>
- Ahmed MH. Reflection for the undergraduate on writing in the portfolio: where are we now and where are we going? *J Adv Med Educ Prof* 2018; 6(3): 97-101.
- Mann K, Gordon J, MacLeod A. Reflection and reflective practice in health professions education: A systematic review. *Adv Health Sci Educ* 2009; 14(4): 595-621.
DOI: <https://doi.org/10.1007/s10459-007-9090-2>
- Hatton N, Smith D. Reflection in teacher education: Towards definition and implementation. *Teach Teach Educ* 1995; 11(1): 33-49.
DOI: [https://doi.org/10.1016/0742-051X\(94\)00012-U](https://doi.org/10.1016/0742-051X(94)00012-U)
- Gadsby, H. Fostering reflective practice in Post Graduate Certificate in Education students through the use of reflective journals. Developing a typology for reflection. *Reflective Pract* 23(3): 2022; 357-68.
DOI: <https://doi.org/10.1080/14623943.2022.2028612>
- David MF Ben, Davis MH, Harden RM, Howie PW, Ker J, Pippard MJ. AMEE medical education guide no. 24: Portfolios as a method of student assessment. *Med Teach* 2001; 23(6): 535-51.
DOI: <https://doi.org/10.1080/01421590120090952>
- Zafeer HMI, Li Y, Maqbool S. An approach to progress learning outcomes: International graduate students' engagement in reflective practice and reflective journal writing during Pandemic. *Sustainability* 2023; 15(3): 1898.
DOI: <https://doi.org/10.3390/su15031898>
- Jorwekar GJ. Reflective practice as a method of learning in medical education: history and review of literature. *Int J Res Med Sci* 2017; 5(4): 1188.
DOI: <https://doi.org/10.18203/2320-6012.ijrms20171223>
- Bari A, Imran I, Ullah H, Arshad A, Naeem I, Sadaqat N. Reflection as a learning tool in postgraduate medical education. *J Coll Physicians Surg Pak* 2021; 31(9): 1094-8.
DOI: <https://doi.org/10.29271/jcpsp.2021.09.1094>
- Göker SD, Bozkus K. Reflective leadership: Learning to manage and lead human organizations. *contemp leadersh challenges*. [Internet]. *Contemporary leadership challenges*. InTech; 2017. Available from: <http://dx.doi.org/10.5772/64968>
- Machost H, Stains M. Reflective practices in education: A primer for practitioners. *CBE Life Sci Educ* 2023; 22(2): 1-11.
DOI: <https://doi.org/10.1187/cbe.22-07-0148>
- Maksimovic J, Osmanovic J. Reflective practice as a changing factor of teaching quality. *Res Pedagog* 2018; 8(2): 172-89.
DOI: <https://doi.org/10.17810/2015.82>
- Chiapello L, Bousbaci R. It's complicated: Dewey, Schön and reflection-in-action. In: Lockton D, Lenzi S, Hekkert P, Oak A, Sádaba J, Lloyd P, Eds. *DRS2022: Bilbao, 25 June-3 July, 2022*. Bilbao, Spain.
DOI: <https://doi.org/10.21606/drs.2022.349>
- Sandars J. The use of reflection in medical education: AMEE Guide No. 44. *Med Teach* 2009; 31: 685-95.
DOI: <https://doi.org/10.1080/01421590903050374>
- Gibson A, Kitto K, Bruza P. Towards the discovery of learner metacognition from reflective writing. *J Learn Anal* 2016; 3(2): 22-36.
DOI: <https://doi.org/10.18608/jla.2016.32.3>
- Taczak K, Robertson L. Metacognition and the reflective writing practitioner: an integrated knowledge approach. *Contemp Perspect Cognit Writ* 2020; 211-29.
DOI: <https://doi.org/10.37514/per-b.2017.0032.2.11>
- Paterson C, Chapman J. Enhancing skills of critical reflection to evidence learning in professional practice. *Phys Ther Sport* 2013; 14(3): 133-8.
DOI: <https://doi.org/10.1016/j.ptsp.2013.03.004>