

## ORIGINAL ARTICLE

**Title:** Three Practical Steps to Facilitate Reflection among Low-Performing Medical Students

**Authors:** Chan Choong Foong, Nur Liyana Bashir Ghouse, Muhamad Saiful Bahri Yusoff, Nurul Atira Khairul Anhar Holder, An Jie Lye, Vinod Pallath

**Submitted Date:** 02-11-2021

**Accepted Date:** 01-06-2022

**Please cite this article as:** Chan Choong Foong, Nur Liyana Bashir Ghouse, Muhamad Saiful Bahri Yusoff, Nurul Atira Khairul Anhar Holder, An Jie Lye, Vinod Pallath. Three Practical Steps to Facilitate Reflection among Low-Performing Medical Students. Education in Medicine Journal. 2023 (early view).

This is a provisional PDF file of an article that has undergone enhancements after acceptance, such as the addition of a cover page and metadata, and formatting for readability, but it is not yet the definitive version of record. This version will undergo additional copyediting, typesetting and review before it is published in its final form, but we are providing this version to give early visibility of the article.

# Three Practical Steps to Facilitate Reflection among Low-Performing Medical Students

Chan Choong Foong<sup>1</sup>, Nur Liyana Bashir Ghouse<sup>1</sup>,  
Muhamad Saiful Bahri Yusoff<sup>2</sup>, Nurul Atira Khairul Anhar  
Holder<sup>1</sup>, An Jie Lye<sup>1</sup>, Vinod Pallath<sup>1\*</sup>

<sup>1</sup> *Medical Education and Research Development Unit, Faculty of  
Medicine, Universiti Malaya*

<sup>2</sup> *Department of Medical Education, School of Medical Sciences,  
Universiti Sains Malaysia*

**To cite this article:** Chan Choong Foong, Nur Liyana Bashir Ghouse, Muhamad Saiful Bahri Yusoff, Nurul Atira Khairul Anhar Holder, An Jie Lye, Vinod Pallath. Three Practical Steps to Facilitate Reflection among Low-Performing Medical Students. *Education in Medicine Journal*. 2023 (early view)

## ABSTRACT

Reflection enables students to develop a deeper degree of learning and identify appropriate opportunities for improvement. As such, remediation coaches should support low-performing students to reflect on their learning experiences and, then, make positive changes through a guided, structured, and facilitated reflection. This study was an attempt towards structuring facilitated reflection (i.e. a structured and guided reflection) among low-performing students. Gibbs' model was adopted as the theoretical framework to develop the reflection approach. Herein, there are three main steps in the reflection process: (1) Engagement: a remediation coach identifies and engages with appropriate students; (2) Active reflection: students complete and submit reflective journals, the remediation coach reads and highlights responses that require clarifications, and then the coach guides the students through their reflection; and (3) Monitoring and follow-up by the remediation coach. In a pilot implementation, students' journal excerpts and dialogues were the supporting evidence used to analyse if effective reflection had taken place, with the student expressing positive and encouraging experiences of the facilitated reflection. These positive experiences suggest that this kind of structured and guided reflection is useful in encouraging reflective practice among low-performing students.

**Keywords:** *reflection, low-performing students, journal, dialogue, remediation*

## CORRESPONDING AUTHOR

Vinod Pallath, Medical Education and Research Development Unit, Faculty of  
Medicine, Universiti Malaya, 50603 Kuala Lumpur, Malaysia

Email: [vinodpallath@um.edu.my](mailto:vinodpallath@um.edu.my)

## INTRODUCTION

Reflection is a process wherein individuals recall and confront their past life experiences and aim to form new understandings based on them (1). These new understandings could shed light in solving complex issues with no obvious solution (2, 3). Further, reflection may be used for various purposes; for example, for students to interpret their past experiences to assist in their learning process, for clinicians to articulate their beliefs and values in building therapeutic relationships with patients, and for clinicians to evaluate their actions and further develop their professional practices (Sandars, 2009).

In terms of education, reflection has been shown to help medical students in developing a deeper degree of learning (4). This ability to reflect thus contributes to the advancement of students' personal and professional development (6). Herein, there is a growing body of literature that acknowledges the importance of promoting medical students' ability to recognise their own strengths and limitations (knowledge, skills, and attitudes) (7). However, medical students rarely practice reflection despite recognising its benefits (4).

Furthermore, reflection is also essential for remediating low-performing medical students to help promote their overall performance (5). Notably, reflection skills are learnt and are not naturally occurring; therefore, developing a structured and guided reflection process is needed. It is also important to develop a guide on the foundations of learning theory to prevent the impact of intuition among coaches or facilitators (6). This article, thus, presents the development and pilot implementation of a structured guide aimed at facilitating reflection. Based on this pilot implementation, a critical reflection on the outcomes, barriers encountered, and lessons learnt are then highlighted.

## **METHODS**

### **Development of the Facilitated Reflection Steps**

#### ***Gibbs' Reflection Model***

Based on experiential learning theory, Graham Gibbs proposed a model for use among learners when performing reflection. This model consists of six phases: (i) description (what happened?), (ii) feelings (what were your reactions and feelings?), (iii) evaluation (what was good or bad about the experience?), (iv) analysis (what sense can you make of the situation?), (v) conclusions (what can be concluded from these experiences and the analyses that you have undertaken?), and (vi) personal action plans (what are you going to do differently in this type of situation the next time it happens?) (10).

#### ***Identification of the Facilitated Reflection Steps Based on Gibbs' Model***

Gibbs' model is generic for use among all types of learners. Subsequently, three steps were actualised in this study for practical use among low-performing students in medical schools (Table 1). These steps were discussed iteratively and were constructed among the researchers based on Gibbs' Model (7), as well as lessons learnt from previous interviews with low-achieving students. Herein, something that we learnt was that some students were able to generate action plans during the interviews but then failed to implement them. Both expert (e.g. academics' feedback) and face (e.g. students as users) validation on the journal format was also performed (8).

**Table 1:** Connecting the facilitated reflection steps to Gibbs' model

Gibbs' Model	Facilitated Reflection Steps
-	Step 1: Engagement - Remediation coach identifies and engages with students
Description	Step 2: Active reflection
Feelings	2a. Students complete and submit their journals
Evaluation	2b. Review: Remediation coach reads and highlights any responses that need clarifications
Analysis	2c. Dialogue: Remediation coach takes the students through their reflections
Conclusions	
Personal action plans	
Personal action plans	Step 3: Monitoring and follow-up

## The Implementation of the Facilitated Reflection Steps

### ***Step 1: Engagement – The remediation coach identifies and engages with students***

First, the remediation coach identifies students who require their assistance. These usually include students who have failed assessments or who have achieved borderline pass grades. These students are then invited to attend a meeting. Herein, a time gap is provided between the announcement of their assessment results and the meeting, considering the possible occurrence of the Kubler Ross Grief cycle (9). The Kubler Ross Grief cycle represents the mental processes and reactions of individuals who have encountered unexpected and unpleasant events. The stages in this model, which were originally described based on the experiences of individuals facing imminent death, include Denial, Anger, Bargaining, Depression, and Acceptance (DABDA). However, this model can be used to explain individuals' reactions and behaviours in various contexts. For example, the time gap between the announcement of results to engagement in this study allowed time for the students to experience possible DABDA before undergoing the facilitated reflection.

Herein, low-performing students may be shocked by their academic failure or deny the fact, feel anger about it, appeal their assessment results, feel hopeless in being able change the fact, and, lastly, begin to stabilise their feelings and start to accept it. Hence, timing was a necessary consideration when scheduling our meetings.

A quiet venue was selected for the meeting to minimise interruptions. The aim, procedures, and confidentiality of the facilitated reflection were communicated, with the students being encouraged to ask questions. The remediation coach then encouraged the students to participate, with any participation being voluntary and non-threatening. Upon obtaining their informed consent, the remediation coach proceeded to the next step.

## Step 2: Active reflection

Active reflection consists of three sub-steps: (2a) Students complete and submit their journal, (2b) Review – The remediation coach reads and highlights responses that need clarification, and (2c) Dialogue – The remediation coach takes the students through their reflections.

### 2a. Students complete and submit their journals

Students provided both their written consent and their contact information. Next, an empty template of the journal was emailed to them. In this step, the students would not write and/or submit their journals during the engagement meeting itself. This is because they may have been better able to articulate more content in their own time and space. Students were encouraged to take time to recall and deeply reflect on their learning experiences in the past academic year. Finally, they submitted their journals one or two weeks later.

The self-administered journal was designed for low-performing students to reflect on their learning experiences in the past academic year (8) (Table 2). The journal was designed using the Gibbs model that encompasses six phases for students to describe, evaluate, and analyse their learning experiences, as well as generate appropriate action plans (7).

**Table 2:** Journal question topics and examples (11)

Question Topics	Examples
Students' personal and family background information and their initial motivation to pursue a medical degree	i. Personal information (Name, date of birth, age, unique or special things about yourself, and previous academic experiences and achievements before entering the university)
Questions used to describe their assessment results and learning experiences	ii. Why did you choose to study medicine?
Questions used to their share thoughts and feelings of their encounters with their courseware	i. How were your examination results?
Questions used to evaluate the good and bad aspects of their situations	ii. What happened? (Did you encounter any problems in terms of your study approach during that time?) (Note: 'study approach' maybe have been changed to cover other topics like their social life, personal life, and family)
Questions used to analyse and make meaning of their	iii. How did you prepare to learn from the teaching sessions?

experiences

Questions used to conclude what their experiences were

iv. How was your attendance?

Questions used to generate an action plan.

v. How would you describe your attention/behaviours during the teaching sessions?

---

### *2b. Review – The remediation coach reads and highlights the responses that need clarification*

The remediation coaches read the journals before engaging in a dialogue with students. The coaches focused on any journal content that required clarification, such as contradicting information (13). Further, short answers without elaboration (e.g. those involving yes, no, maybe, or not sure) were also highlighted. Finally, the remediation coaches wrote a summary with possible contributing factors (i.e. potential causes of low performance). These were all preparation steps for the dialogue with the students to identify possible causes of their academic challenges.

### *2c. Dialogue: The remediation coach takes the students through their reflection*

The remediation coaches then scheduled individual dialogue sessions to take the students through their reflections (11). These dialogues were conducted in a quiet room and were recorded. These recordings aimed to protect both the remediation coaches and the students in case any disputes arose in the future. Further, each student provided consent for the recordings. The dialogue consisted of four types of questions (Table 3).

**Table 3:** Types of dialogue questions and examples

Types of Questions	Examples
Questions used to build rapport with the students	i. Before I start, let me summarise your information. You are from [name of a state] and you are active in joining [names of the activities]. May I know what kind of [name of the activities]?
Initial questions for everyone	i. When did you realise that you were going to fail the examination? ii. If you could start this over again, what is the one action that you would change? What's your reason for this?
Spontaneous prompts (12)	i. You thought that it was not useful. In what way was it not helpful, could you elaborate? ii. Would you clarify what you mean by 'doing things' that you would consider important?

Follow-up questions on journals

i. Okay, in the journal, you mentioned that you were lacking in discipline. What happened?

ii. In this period of time from X to Y, you mentioned that you had greater interest in other things. What were these other interests?

---

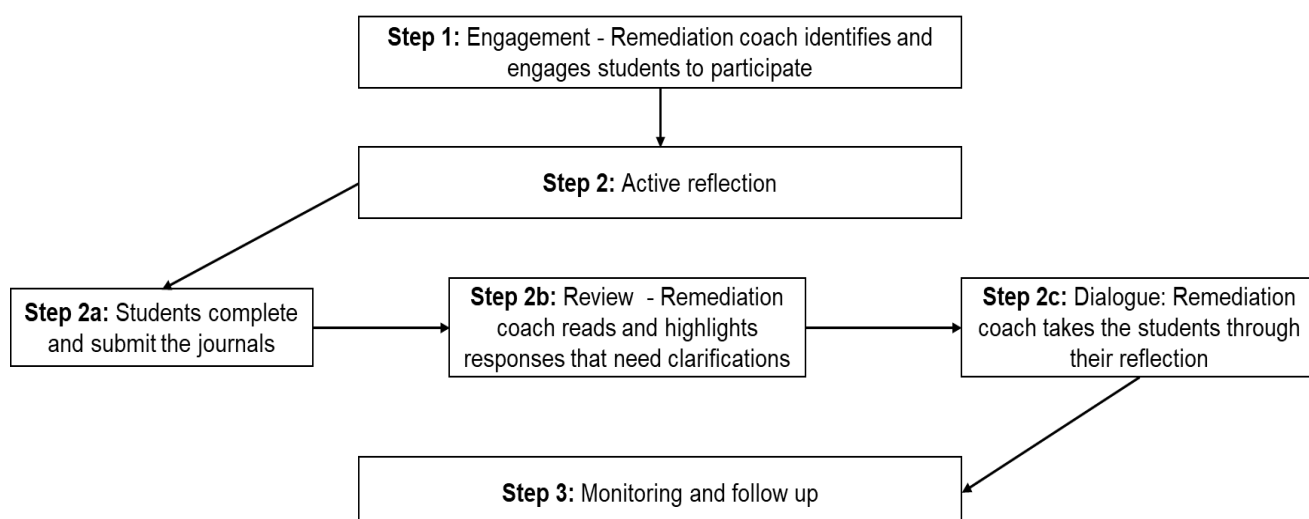
The remediation coaches avoided using any judgemental words as low-performing students are often ‘fragile’ and sensitive. Further, if the students expressed any serious emotions (e.g. crying, anger, or disappointment), the remediation coaches would allow time for them to calm down.

During each dialogue session, the remediation coaches clarified any contradicting information in the student’s journal and prompted them for further elaboration on any of their shorter answers. The remediation coaches also asked some questions that were also in the journal to cross-validate the students’ responses and to check for consistency.

Towards the end of each session, the dialogue and action plan of each student was discussed. It was particularly important to address the question of ‘How are you going to carry out your action plan?’

### *Step 3: Monitoring and follow-up*

The remediation coaches continued to monitor the students’ action plans and academic performance. Students then wrote another journal or attended another dialogue session if there was any need to help them in monitoring their current performance or the progress of their action plan. Steps 1, 2, and 3 are illustrated in Figure 1.



**Figure 1:** A process chart of the facilitated reflection course

## RESULTS

### Pilot Project and its Evaluation

The facilitated reflection session was conducted with 12 low-performing medical students. The students' views on the journals and their responses within them, as well as the dialogues, were all analysed thematically. A six-step approach was performed to identify, analyse, and report upon patterns within both the journals and dialogues: (i) read and become familiar with the data, (ii) identify meaningful text and label these as codes, (iii) sort/classify codes into themes, (iv) review the themes and cross check them with data extracts, (v) define and name the themes, and (vi) tell the story via outlining the themes and relevant data extracts (13, 14).

Students' views on the journals were both positive and encouraging. In this section, all the students' names are pseudonyms. The journals reportedly 'helped (them) to reflect' (Whitney; Larrisa) and 'put things into perspective' (Sarah). The journals also enabled them to confront issues that they had been avoiding or had not thought that much about. Subsequently, the journals also 'helped (them) to find the causes of failures' (Alvin).

*'It made me think about many issues that I was too scared, or I had avoided reflecting on. Therefore, it was insightful for me'.* (Dana)

*'It helps me think of many things that I didn't really give much thought about. There were revelations to why things turn out this way and I am glad that I could receive them'.* (Jane)

Table 4 provides some excerpts demonstrating that the journal was useful in eliciting student responses in describing their experiences and feelings, evaluating and analysing these experiences, make conclusions, and generate action plans. Meanwhile, Table 4 also shows how the dialogue further promoted students' individualised reflection through building rapport, asking initial questions, providing spontaneous prompts, and asking follow-up questions. In summary, the student responses in both the journals and dialogues suggested that they were able to effectively reflect using this approach.

**Table 4:** Examples of student responses in the journals and dialogues

Journal	Excerpts
Motivation	Daphene: 'After completing my foundation studies, I would like a chance to reconsider my choice to study medicine, but my mother insisted that I should choose medicine. I was unable to refuse, so I continued studying medicine'.
Description	Jane: 'I didn't prepare much when I attended lessons, my attendance was good, but my mind always wandered around. I didn't do much revision after classes. Occasionally I would read some easier topics that captured my attention. I spent most of my time going out and having fun to escape from my studies'.



Feelings	Whitney: 'I did not expect that I will fail my final examination and I was so sad. I cried when I told my parents and that hurt me to see that they were disappointed with me'.
Evaluation	Alvin: 'I learned that I was not well prepared for the examination, my studying method was wrong and I needed to improve my method. But at that time, I did not realise that one of the major distractions was my addiction to [name of a hobby]'.
Analysis	Ruby: 'I was not focused and I wasn't aware of my progress and study habits. It made me feel tired and not fulfilled because I spent my time worrying about the things I had to get done, instead of doing it'.
Conclusion	Larrisa: 'I would tell myself to study consistently and to not leave my studies to the last minute. Have more self-discipline and do not be attached to the [name of a hobby]. Be more active in lectures and stay awake by all means'.
Action Plan	Dana: 'I have started studying much earlier, more systematically, and not based on topics that I like or dislike. I am also paying full attention during classes. I am taking measures to prevent myself from getting distracted during classes. I am aiming high and not giving up'.

Dialogue	Excerpts
Building rapport	<p>Coach: 'Before I start, let me summarise your information. You are from [name of a state] and you are active in joining [names of the activities]. May I know what kind of [name of the activities]?'</p> <p>Whitney: 'When I was in primary school, I joined [name of a sport] but my parents asked me to stop joining sports. But for now, I am joining [name of a sport] because I think it's not too hard and I can do that'.</p>
Initial questions	<p>Coach: 'If you could start this over again, what is the one action that you would change? What's your reason?'</p> <p>Jane: 'Time management...prioritise important things no matter how difficult it is. And my studies need to be my priority because my goal in UM is to pass'.</p>
Spontaneous prompts	<p>Coach: 'You thought it was not useful. In what way was it not helpful, could you elaborate?'</p> <p>Jane: 'In Matriculation (year) even though I didn't prepare before classes, I only paid attention during classes, and revised after classes, I could understand and obtained good results'.</p>
Follow-up questions	<p>Coach: 'Okay, in the journal, you mentioned that you were lacking in discipline. What happened?'</p> <p>Sarah: 'When I am procrastinating, I don't have discipline to study. So, I think I need "discipline" to tell me that I should be doing this, I should do that and to prevent me from being carried away by distractions'.</p>

Note: Information in the excerpts that would expose any personal and family background information were removed to avoid any potential identification of the students.

## **DISCUSSION**

### **Outcomes and barriers encountered**

Although the student responses in the journals and dialogues indicated that the facilitated reflection was helpful, there are some recognisable limitations. Fundamentally, this approach is an externally motivated reflection. As such, the remediation coaches initiate the reflection and follow-up with students. However, facilitated reflection might not be suitable as the intrinsic need for reflection is not necessary herein. A self-motivated and initiated reflection process could be a better solution. However, this facilitated reflection process could be argued as an effective method in initiating the awareness of the utility of reflection, which could potentially encourage reflection to become second nature among the participating students.

Further, during some follow-up meetings, students used the dialogue session as a platform to seek emotional and moral support and had little intention to actually make any positive changes. Herein, some students might have merely viewed the dialogues as a medium to express their frustration and sadness. Further, they only wanted to talk to the remediation coaches to release their stress and express their feelings. When dealing with this kind of situation, the remediation coaches should not acquiesce to these actions and should remind the students of the actual purpose of the dialogues.

In Step 1, most of the low-performing students did not consent to participate in the facilitated reflection. Typically, low-performing students are reluctant to share their negative feelings and experiences (15). Thus, to deal with this, the remediation coaches could always 'keep the door open'. Further, the remediation coaches should continue to encourage and support these students; however, their participation must remain voluntary in nature. Those non-participating students may be approached again if they fail another assessment in the future. Past studies have shown that low-performing students are likely to continue to underperform and experience a cycle of failure (16, 17). Therefore, there is a clear need for students to be self-aware in understanding that they need help and should have the self-determination to take action and break away from this cycle of failure (18).

While reflection is essential for students to learn from past experiences and to respond in an appropriate way, it should not be seen as the sole solution. It is also important to note that the remediation coaches may not be able to resolve every possible student issue, such as those to do with finances and their families. In addition, the dialogues with students are not meant to be a counselling session, as this should rather be conducted by professional counsellors. In this context, coaches could direct students to appropriate supporting opportunities and resources, such as professional counselling, financial aid, peer learning, and remedial classes (5).

## **Lessons learnt**

### ***Preparation before the facilitated reflection***

Training is necessary for all remediation coaches before getting involved with the facilitated reflection activities. This training could include topics like effective communication (e.g. building rapport, using open and closed questions, employing attentive and empathic listening), situational judgement awareness, and emotional regulation. Including sharing sessions with senior remediation coaches into this training would also enable a better understanding of the real-life situations that arise when remediating the students, as well as how to deal with them. In addition, the remediation coaches must not be anyone who is involved with the students' assessments as this could make them too intimidating, thereby putting the remediation coaches in an awkward situation.

### ***During the facilitated reflection***

At the beginning of the dialogue session, the remediation coaches could again emphasise confidentiality to make the students feel more comfortable to share and reflect on their experiences. If note writing is a style used by some remediation coaches, it is paramount to inform students of this in advance. The remediation coaches must also be reminded to maintain good eye contact with the students throughout the individual dialogue sessions.

Furthermore, students should be the ones to develop their action plans instead of being given the solution. This is meant to enhance and promote their critical thinking and problem-solving skills, as well as increase student involvement in decision making. If, at times, students seem to 'stray' in the wrong direction (e.g. wrong choice of action, unrealistic action plan), the remediation coaches are there to advise and guide them.

### ***After the facilitated reflection***

De-briefing sessions among the remediation coaches would help them reflect on their practices/approaches. Listening to students can be very taxing (time, effort, emotion) as the remediation coaches would also have other commitments, such as teaching, administration, and research. Thus, the coaches would also need to spend some time alone or talk to their colleagues to make sense of what has happened during the remediation process.

Follow-up meetings with students are also paramount (especially to those who seem 'not yet aware' or who are having difficulties in executing their plans). These meetings are also meant for monitoring and reinforcing the utilisation of the reflection process among students.

## **STUDY LIMITATIONS AND FUTURE DIRECTIONS**

The academic performance of medical students is multifactorial. As such, improving the academic performance among low-performing students also depends on numerous factors, such as their practices of self-regulated learning (22), intrinsic motivation (23), and overall resilience (24). Hence, improving their overall academic performance was beyond the scope of this study. Future research is

thus required to provide evidence on the direct impact of facilitated reflection on academic performance. One possible approach would be to interview low-performing students who have successfully improved and have obtained a satisfactory performance.

In this pilot study, there were three remediation coaches working as a team: (a) a student support officer, with an MBBS qualification and who was pursuing Master's degree on investigating academic failure among low-performing medical students; (b) a medical educationist, with a PhD in education and who had conducted research on educational psychology; and (c) a medical educationist, with a PhD in medical education and who had conducted research on reflective practice. Further, they received no prior formal training; the enabling factor was their commitment towards student support. Further, it was based on their academic background, on-the-job discussions, and a literature review that they collectively brainstormed and used to develop the facilitated reflection.

Upon reflection on this pilot study, the remediation coaches perceived their necessary characteristics to be as follows: be a good listener (do not interrupt), be empathetic (do not judge), be ethical in handling students' privacy and confidentiality (do not reveal what they wrote and said), give advice based on evidence (do not consider your own intuition and experiences), and show an intrinsic sense of commitment (do not see the commitment as a duty or a responsibility). However, this pilot study was unable to provide concrete answers on how to best select and train remediation coaches. More research is thus required to detail the training needs of remediation coaches for low-performing students (8).

Further, the methodology of this study was imperfect. If the follow-up meetings with the students were audio-recorded, the data could have been further analysed to elucidate the impact of monitoring on the students' action plans. As such, future research could do this so that the data may be used as evidence of students turning their awareness into actions. Finally, a recent scoping review summarised six elements of tools for reflection among healthcare students (25). Although the journal used in this pilot encompassed a few of these elements (e.g. consider the impact of past situations, consider alternatives), it may be further improved by prompting students to recognise their limits as learners (25). Helping low-performing students is challenging because they need to be aware of their limitations and actively seek help (21).

## **CONCLUSION**

Low-performing medical students may not be natural reflective practitioners. As such, the facilitated reflection in this research conducted over three steps could be used to promote an awareness and utilisation of reflection. Through using journals, dialogue sessions, and follow-up meetings, this facilitated reflection guide might be useful for low-performing students to reflect on their past learning experiences and respond appropriately in order to make improvements going forward. Further, the remediation coaches play an important role in facilitating the reflection of students and in monitoring the progress of their action plans.

## ACKNOWLEDGEMENTS

### *Funding*

The project was supported by the Geran Penyelidikan Tabung UMSC CA.R.E (PV045-2019).

## REFERENCES

1. Ahmed MH. Reflection for medical undergraduate: learning to take the initiative to look back to go forward. *J. Hospital Manag. Health Policy*. 2018;2:31.
2. Philip L. Encouraging reflective practice amongst students: A direct assessment approach. *Planet*. 2006;17(1):37-9.
3. Helyer R. Learning through reflection: The critical role of reflection in work-based learning (WBL). *J Work-Applied Manag*. 2015;7(1):15-27.
4. White CB, Ross PT, Gruppen LD. Remediating students' failed OSCE performances at one school: The effects of self-assessment, reflection, and feedback. *Acad. Med*. 2009;84(5):651-4.
5. Chou CL, Kalet A, Costa MJ, Cleland J, Winston K. Guidelines: The dos, don'ts and don't knows of remediation in medical education. *Perspect. Med. Educ*. 2019;8(6):322-38.
6. Devi V, Abraham RR, Kamath U. Teaching and assessing reflecting skills among undergraduate medical students experiencing research. *J. Clin Diagnostic Res*. 2017;11(1):JC01-JC5.
7. Gibbs G. *Learning by doing: A guide to teaching and learning methods*. Oxford: Further Educational Unit; 1988.
8. Holder NAKA, Sim ZL, Foong CC, Pallath V. Developing a Reflection Guiding Tool for underperforming medical students: An action research project. *Tuning J. Higher Educ*. 2019;7(1):115-63.
9. Kübler-Ross E, Kessler D. *On grief and grieving: Finding the meaning of grief through the five stages of loss*. New York: Scribner; 2005.
10. Creswell JW. *Educational research: Planning, conducting, and evaluating quantitative and qualitative research*. 4th ed. Boston: Pearson Education; 2012.
11. Tsang NM. Reflection as dialogue. *Br. J. Soc. Work*. 2007;37(4):681-94.
12. Merriam SB, Tisdell EJ. *Qualitative research: A guide to design and implementation*. 4th ed. San Francisco: John Wiley & Sons; 2015.
13. Saldaña J. *The coding manual for qualitative researchers*. 2nd ed. Sage Publications; 2013.
14. Braun V, Clarke V. Using thematic analysis in psychology. *Qual. Res. Psychol*. 2006;3(2):77-101.
15. Jouhari Z, Haghani F, Changiz T. Factors affecting self-regulated learning in medical students: A qualitative study. *Med. Educ. Online*. 2015;20(1):28694.
16. Cleland J, Arnold R, Chesser A. Failing finals is often a surprise for the student but not the teacher: Identifying difficulties and supporting students with academic difficulties. *Med. Teacher*. 2005;27(6):504-8.

17. Cleland JA, Milne A, Sinclair H, Lee AJ. Cohort study on predicting grades: Is performance on early MBChB assessments predictive of later undergraduate grades? *Med. Educ.* 2008;42(7):676-83.
18. Patel R, Tarrant C, Bonas S, Yates J, Sandars J. The struggling student: A thematic analysis from the self-regulated learning perspective. *Med. Educ.* 2015;49(4):417-26.