

# Perceptions of Undergraduate Physiotherapy Students on Self-Reflection during Clinical Placements in Intensive Care Unit

Dina Adam and Ng Ming Yip

**ABSTRACT.** Background: Self-reflection is a strategy used often in clinical education to gain insight into students' critical thinking and professional development. The purpose of this study was to explore the perceptions of physiotherapy students regarding self-reflection during clinical placements. Methods: A semi-structured interview guide was developed, and the guide focuses on knowledge in intensive care unit (ICU) management, perception towards experience and practice in their current clinical placement, knowledge and confidence in practice change, and future interventions towards practice change. Thematic analysis of interview data led to the emergence of four significant themes related to students' clinical learning experience of the students: (1) Professional behaviours; (2) Awareness of learning; (3) Self-progress and direction change; and (4) Students' feedback. Results: The majority of students (60%, n=9) reported that they were competent enough at the end of the ICU clinical placement due to adequate exposure and supervision. The students in this study have positive perceptions regarding self-reflection. Self-reflection helps improve their professional behaviours, and awareness of the challenges and the need to learn and gain experience as much as possible in a clinical setting.

**KEYWORDS:** perception, self-reflection, clinical placement, intensive care unit (ICU)

## I. INTRODUCTION

Self-reflection is important to determine the learning requirements for ongoing professional development, as well as the boundaries of one's profession and area of expertise. It is vital for students to make the connection between the theory and actual clinical practice because it is related to ethical, professional, and clinical practice (Lindquist et al., 2017).

Self-reflection is an individual activity demands your mind to focus on a subject matter or an experience, but in the higher education it must be addressed within boundaries set by the academic context (McMillan & Weyers, 2012). It is an important academic skill that students will gain from experience, learn, and analyze their experience based on facts and evidence-based research or theories not feelings, and later apply their understanding to practice. This process flows naturally and happens informally every day without us realizing it.

Being able to critically analyze requires self-reflection, which calls on you to 'question' what you've experienced, felt, and read. You must combine your personal experience with academic study supported by evidence alongside your personal experience. Self-reflection includes the process of self-discovery which is challenging that sometime can be intimate and affect emotions (Willmott, 2018; Cottrell, 2013). It demands time and practice for anyone to develop good reflective skills.

Self-reflection is the process of going over a practice experience to characterize, assess, and provide guidance for future practice (Reed & Jane, 1997). It's about opening one's practice to scrutiny by others, calling for bravery, receptivity, and the ability to take criticism well. There are also elements of critical theory, which suggest that self-reflection involves changing perspectives, taking action, reviewing experiments, and learning through one's own experiences (Nuraini et al., 2020). It is a technique that is frequently employed in clinical education to get insight into students' critical thinking and professional development. It gives students a great opportunity to analyze treatment and strengthen their capacity to make clinical decisions.

In health professions students' higher education, the development of reflective thinking is often not prioritized until experiential workplace learning (Christing, 2022) or clinical placements begin, which often occurs later in the course. During clinical placements, undergraduate students and their clinical mentors typically focus on task-based clinical skills and practices, time management, case prioritization, clinical reasoning, assessment, and treatment procedures. Students often do not have time to critically reflect on their actions in clinical settings (Choy et al., 2021).

## II. PROBLEM STATEMENT

Research on the application of self-reflection by undergraduate Bachelor of Physiotherapy students in intensive care unit (ICU) clinical practice is scarce. Thus, to guarantee the method's effectiveness, a more favorable perspective on self-reflection needs to be found. The ICU requires clinical reasoning abilities to improve job competence. But our understanding of how physiotherapy students acquire and use their abilities in the intensive care unit is limited. We will therefore have a better understanding if we investigate how to make the reflection better, collect additional data from the students' experiences, and pinpoint the complicated variables.

## III. LITERATURE REVIEW

Dina Adam, INTI International University (IIU), Nilai, Malaysia  
(dina.adam@newinti.edu.my)  
Ng Ming Yip, Universiti Selangor (UNISEL), Selangor, Malaysia  
(mingyip@unisel.edu.my)

According to theory, self-reflection is an essential component of teaching and learning that can extend understanding of difficult topics, develop knowledge, serve as a guide for future learning, and explore emotional aspects of difficult situations (Winkel et al. 2017). Understanding the purpose and efficacy of self-reflection in the medical and health sciences is still challenging.

There are numerous ideas regarding the components of the critical reflection process, which contributes to the confusion caused by the diversity of reflection definitions. In fact, only one in ten participants could name a model of reflection, suggesting that participants generally lacked a conceptual grasp of the idea of self-reflection (Burt, & Morgan, 2014).

Dewey's philosophy (1994) stated that self-reflection is the act of recalling, considering, and evaluating one's own experience. An evidence-based approach on skills and attitudes is strong emphasis. The lack of an affection component and belief that one must first make a mistake to learn from it were the limiting factors (Rawson, 2000).

Rawson (2000) mentioned that having power over, rather than power with was evident in many educational institutions. The knowledge is not a final product and argues that the meaning and understanding process is more important than the end product.

In order for learning to be effective, a student must go through four steps in the learning cycle: developing abstract concepts, testing them in new settings, and gaining concrete experience, observation, and reflection (Kolb 1984).

There are numerous approaches to investigate how current study determines how teaching is influenced by lifetime learning skills, self-assessment abilities, and self-belief. Kolb's (1984) cycle of reflective practice is applied as it is less complicated.

#### IV. METHOD

##### Study Design

The qualitative research design was used to explore the perception and attitude of the final year undergraduate physiotherapy students' experience in ICU during clinical placements. Participants were selected for an interview (n=15). To get qualitative information on 'how' and 'why' the participants employed reflection during their ICU clinical placement, the interview questions were based on the questionnaire items. The collection of qualitative data (individual interviews) was integrated for final interpretation. The descriptive survey design was used to ascertain participants' perceptions and meanings of self-reflection. All interview sessions were recorded and transcribed verbatim, after getting informed consent. To ensure precision, the research team kept an audio trail of the process, including the interview data. The face-to-face interview were lasted for 30 to 40 min.

Participants were drawn purposively from 15 of final year undergraduate Physiotherapy students of Cyberjaya University. All students speak Bahasa Malaysia and English and in their fourth year of clinical placement. They were supervised by clinical preceptors and clinical instructors during their 12 weeks of ICU exposure.

##### Data Collection

A semi structured interview guide that focuses on knowledge in ICU physiotherapy management, perception towards experience and practice in their current clinical placement, confidence and future interventions in practice change was developed. The guide was validated and assessed for reliability prior to data collection. The reliability of the study was ensured by maintaining transcripts of face-to-face interviews with study respondents. The guide was piloted on other undergraduate physiotherapy students from other ICU clinical placements and modified accordingly.

##### Data Analysis Methods

Each transcription is compared to the recording to ensure authenticity. To gain a comprehensive understanding of the data, the researcher reviewed the recordings and played each recording multiple times, extracted relevant data, coded duplicates, and finally summarized the data into themes. The consensus on four themes concerning the clinical learning experience of the students were evaluated by the two primary evaluators. The topics themes are identified by assigning each element, word, sentence, and paragraph of a document to a category. This is done in two steps: first, group all relevant text into repeated ideas, and second, group all repeated ideas into abstract themes that represent the more general ideas underlying the repeated ideas.

#### V. FINDINGS

##### *Descriptive result*

##### Experiences of physiotherapy students in ICU (N=15)

Seven students (46.7%) reported that they were well-braced in terms of basic knowledge at the commencement of the ICU clinical placement. Approximately 10 (66.7%) students were able to defend choices of treatment techniques they made during the ICU clinical placement, and the ICU clinical rotation block seemed to help in developing their ability to work as a team member. Eleven students (73.3%) feel confident after being posted to ICU clinical placement (Table 1 below).

**TABLE 1: EXPERIENCES OF PHYSIOTHERAPY STUDENTS IN ICU (N=15)**

Statements	Agree n (%)	Neutral n (%)	Disagree n (%)
I was well prepared in terms of basic knowledge at the commencement of the ICU clinical placement.	7 (46.7%)	7 (46.7%)	1 (6.7%)
I felt very confident assessing and treating patients in ICU.	4 (26.7%)	9 (60%)	2 (13.3%)
Multisystem injuries were easy to manage in ICU.	4 (26.7%)	7 (46.7%)	4 (26.7%)
I was able to defend choices of treatment techniques I	10 (66.7%)	4 (26.7%)	1 (6.7%)

made during the ICU clinical placement.			
As a result of this ICU clinical placement, I feel confident working in this area.	11 (73.3%)	3 (20%)	1 (6.7%)
I lacked proper patient handling skills especially for those patients who were critically ill.	6 (40%)	8 (53.3%)	1 (6.7%)
The ICU clinical rotation block helped me develop my ability to work as a team member.	10 (66.7%)	5 (33.3%)	0 (0.00%)
The course stimulated my interest in the field of study.	10 (66.7%)	3 (20%)	2 (13.3%)
I learned to explore ideas confidently with other health professionals.	12 (80%)	3 (20%)	0 (0.00%)
I was able to provide a holistic patient approach using the ICF assessment tool during the ICU clinical placement.	9 (60%)	4 (26.7%)	2 (13.3%)

**Competence based training in ICU (N=15)**

Most students (60%, n=9) stated that they were sufficiently competent at the end of their clinical placement in the ICU. Approximately 53.3% (n=8) students agreed that they were able to analyze, synthesize, evaluate and judge to integrate knowledge, skills, experience and values to facilitate decision-making in the ICU (Table 2 below).

**TABLE 2: COMPETENCE BASED TRAINING IN ICU (N=15)**

Statements	Agree n (%)	Neutral n (%)	Disagree n (%)
I am now able to demonstrate effective, efficient, and innovative therapeutic skills in caring for the critically ill.	9 (60%)	4 (26.7%)	2 (13.3%)
I am now able to do, analysis, synthesis, assessment, and judgement to integrate knowledge, skills, experience, and values in order to facilitate decision making in critical care.	8 (53.3%)	6 (40%)	1 (6.7%)
I can effectively use, and I am now able to contribute to research and advance practice in the field of ICU.	4 (26.7%)	10 (66.7%)	1 (6.7%)
I can demonstrate commitment to the profession, healthcare and society by engaging in strategic leadership that promotes best practice in ICU.	6 (40%)	9 (60%)	0 (0.00%)
As a result of this placement, I can now advocate for the evolution of existing practice standards and the development of new ones in the field of ICU.	6 (40%)	7 (46.7%)	2 (13.3%)
I am now able to regularly engage in activities that expand and evolve my	12 (80%)	2 (13.3%)	1 (6.7%)

knowledge and skills in critical care management.			
I can now integrate and apply new knowledge and principles into specialist practice.	10 (66.7%)	5 (33.3%)	0 (0.00%)
The placement helped me to seek out and create innovative opportunities for learning in the field of ICU.	11 (73.3%)	4 (26.7%)	0 (0.00%)
I am now able integrate clinical experience, broaden theoretical knowledge and communication skills in clinical documentation, professional dialogue, and all aspects of client care in ICU.	13 (86.7%)	2 (13.3%)	0 (0.00%)
As a result of the placement, I am now able to perform an assessment which incorporates specificity, sensitivity and efficiency in ICU.	11 (73.3%)	3 (20%)	1 (6.7%)

**Challenges experienced by physiotherapy students during the ICU clinical placement (N=15)**

Nine (60.0%) of the students agreed that the internship was too short to master all the techniques. And 8 (53.3%) students agreed that the presentation of patients with multi system injuries makes it difficult to assess and treat (Table 3 below).

**TABLE 3: CHALLENGES EXPERIENCED BY PHYSIOTHERAPY STUDENTS DURING THE ICU CLINICAL PLACEMENT (N=15)**

Statements	Agree n (%)	Neutral n (%)	Disagree n (%)
Duration of the attachment too short to master all the techniques.	9 (60%)	5 (33.3%)	1 (6.7%)
Severity of the patients not suitable for my level of education.	4 (26.7%)	6 (40%)	5 (33.3%)
Presentation of patients with multisystem injuries making it difficult for me to assess and treat.	8 (53.3%)	5 (33.3%)	2 (13.3%)
The number of health team personnel working on the patient quite disruptive.	1 (6.7%)	5 (33.3%)	9 (60%)
Patient not being able to communicate and making assessment difficult to perform.	6 (40%)	6 (40%)	3 (20%)
Felt inadequate in terms of knowledge and skills in the area.	5 (33.3%)	9 (60%)	1 (6.7%)
Felt restricted in what I could do for the patient.	5 (33.3%)	5 (33.3%)	5 (33.3%)
The environment is intimidating/ scary.	1 (6.7%)	8 (53.3%)	6 (40%)
Inadequate supervision.	2 (13.3%)	6 (40%)	7 (46.7%)
Duration of the attachment too short to master all the	9 (60%)	6 (40%)	0 (0.00%)

techniques.

### Qualitative result

Thematic analysis of interview data led to the emergence of four significant themes related to students' clinical learning experience of the students: (1) Professional behaviours; (2) Awareness of learning; (3) Self-progress and direction change; and (4) Students' feedback (Table 4 below).

**TABLE 4: ISSUES EMERGING FROM THE INTERVIEW**

Breakdown of interview	
Theme 1	Demonstration of professional behaviours which involves skills and attitudes, scope of practice, professional boundaries, and respect for clients and colleagues.
Theme 2	Demonstration of awareness of learning which included clinical versus academic learning with clients as a source of learning to gained new knowledge.
Theme 3	Demonstration of self-progress with a change to a more client-oriented focus over time during clinical placement.
Theme 4	Students feedback.

### Professional behaviours

Students appeared to be aware of their own behaviour and the behaviour of other students, other physiotherapists, and other health professionals. They consider how they should conduct themselves as professionals and how they should conduct themselves in general. Acts by students, physiotherapists, and other health professionals, as well as acts they saw as favourable and negative, all sped up their self-reflection (Winkel et al., 2017).

The students represented that physiotherapists and other health professionals must being able to show good example and be professional. This involves student-physiotherapist and patient-physiotherapist relationship. A good attitude and evidence-based knowledge seemed to help the students in their clinical practice, clinical reasoning and preparing them to be a professional. The students are aware that self-discipline, self-directed learning, and life-long learning provide good insight into the profession and ensure they doing the appropriate things in future.

*'I felt incompetent as a physiotherapist as I was not able to notice something as simple and basic as that. Hence, it made me to be more alert when treating patients in ICU' (student 10).*

*'Writing my daily reflective diary during my clinical postings has really made me properly think back and reflect on my actions throughout the day and I have been slowly trying to improve from it' (student 11).*

*'When I am very clueless and panic about the condition (do not know what assessment and treatment can be done during the session), and also when I do not know much regarding the condition. Therefore, I will do more reading on that condition to know the background and information of the condition' (student 14).*

### Awareness of learning

Students demonstrated good understanding about the importance of self-reflection in their clinical learning. Self-reflection guides the students in their clinical practice by doing self-check on what was right and wrong after treating patients. Students noted that working with real patients is not as easy as learning in the classroom. These students recognize the need for self-directed learning as they continually encounter new situations while interacting with patients. They recognize that patients are the source of knowledge and that clinical situations provide motivation for learning.

*'When the therapist asks me certain questions during the clinical, it helps me realize that I might know certain things but not all things. And it happens throughout all the clinical time I've been there; hence the knowledge is bigger and deeper than you've know' (student 5).*

*'Reflection during clinical practice is important to know how well a person understands something. I feel that being able to reflect on yourself during clinical practice is important to know how much I understand about something and how I will be able to apply it to patients' (student 10).*

*'To review what is the correct and wrong thing that I am doing now. To ensure myself is applying the suitable and appropriate skills and treatment to my patient. To ensure myself is practicing evidence-based assessment and treatment during clinical practice. To enable myself to learn more knowledge besides the textbook' (student 14).*

### Self-progress and direction change

The theme of self-progress was evident in the changes in their self-reflection over the course of their clinical placement. Students are often not confident when they first enter clinical practice. As they worked with the patient and learned from colleagues, physiotherapist and multidisciplinary team, they seemed to reflect and do the right things, hence this improved their confidence level. They were worried about their self-performance, and about what they were learning from the clinical placements. They find that treating patients in ICU is a new experience that requires skills and knowledge, and more effort and interest. They also claimed that physical fatigue, laziness, over confidence, and lack of motivation seemed to hinder self-reflection.

*'Fatigue, laziness, feeling of too smart, not enough motivation, time management, lack of effort and interest to do better / to learn more' (student 3).*

*'When treating a patient after cardiac surgery in ICU, I need to reflect more on my skills to understand what the contraindications and precautions are that I need to take when treating the patient. I need to be aware of the surroundings, handle the patient efficiently, and*

work closely with other multidisciplinary team members (student 10).

*'I meet a patient who just undergoes the CABG surgery in the ICU. I feel panic when first time I saw all the lines and tubes inserted to the patient although I learnt all these in the theory class. The reflection caused me to learn more on it so that I able to treat the patient with confidence on next treatment session' (student 9).*

#### Students' feedback

The students highlighted the importance of the university's clinical instructors, physiotherapists, other healthcare professionals, students, and patients. They realized that the choice of clinical placement is very important, so that students will be exposed more to different cases and learn how to manage the patient. At the same time, they will learn how to gather information, assessing and managing it if they were given a different kind of condition, this helps them to reflect and improve further. They strongly recommended that future students must be aware of the importance of self-reflection as it helps to improve their insight towards patients care and competence in their future work.

*'ICU can make me reflect more because when I see the patient's condition (in bad healthy conditions) can lead me to reflect more on my life' (student 2).*

*'Self-reflection is one of the most important aspects of both as physiotherapist and also to become a better person' (student 3).*

*'In my opinion, students should be disciplined and should reflect on themselves every day to obtain more knowledge besides what lecturers and therapist taught and to ensure they are doing the appropriate things during the clinical practice' (student 14).*

## VI. DISCUSSION

### Descriptive findings

#### Students experience in ICU clinical placement

The students were satisfied with the ICU clinical instructor because of the sufficient preparation and being able to defend choices of ICU treatment techniques. Apparently, they feel confident working in ICU as they were given adequate exposure. Many students were delighted with the ICU learning experience and were competent at the end of the placement due to adequate exposure and supervision, consistent with the study of Mudavanhu et al. (2016). Therefore, learning outcomes associated with academic and clinical education experiences is favorable (Healey, 2008).

#### Competency based training

More than half of the students were adequately competent at the end of the ICU exposure. They were able to carry out an analysis, synthesis, assessment, and judgment, and integrate it into knowledge, skills, experience, and

values which have facilitated their decision making in ICU. Autonomy given by the physiotherapist allowed them to carry out treatment with supervision, hence has improved their confidence level consistent with the study of Wijbenga et al. (2019).

#### Challenges experienced by physiotherapy students during the ICU clinical placement

Most students felt that the ICU exposure was too brief to fully learn all the procedures. The majority of students reported that complex patients and multi-system injuries were challenging to handle and evaluate. However, adequate supervision from the clinical supervisors contributed a lot to their ICU exposure experience. It was determined that the educational roles of method demonstrator, mentor, assessor, knowledge provider, and learning facilitator have a significant impact on the clinical learning environment (Ernstzen, 2013).

### Qualitative findings

#### Professional behaviour

The self-reflection method provides a way of best practice among future physiotherapists. The students must be taught to reflect and make it a routine form of learning particularly in their clinical placement. The students learned to value themselves and managed their individual and emotive issues, perceive things from different viewpoints, and recognize the need for change of practice through consistent self-reflection.

They are not only learning events, but also instill affective domain for example evaluate the ways they have matured, receive feedback from physiotherapists, and form new goals that can improve future resolutions (Branch & Paranjape, 2017). Even when physiotherapists started their professions and finished their schooling, they were still thinking about how they could improve personally.

#### Awareness of learning

Developing emotional intelligence requires first becoming self-aware. In this study, the students were aware of the importance of self-reflection in their learning. Consistent with the Davy (2020), knowing ourselves better and being able to proactively manage our thoughts, feelings, and behaviours depend on our ability to observe, analyze, and reflect on our thoughts and emotions so we can make changes for the betterment of the patient's management. Aware of the importance of self-reflection in clinical placement is thoughtful in decision-making. They acknowledged that their patient management was not only affected by communications, but also by their experience.

They are also aware that it was thought to be crucial for students to maintain ties with a variety of people. Students benefited from connections by receiving attention, support, and encouragement when needed. Students' views on their families revealed that, despite their busy academic schedules, family relationships were significant in their lives and that they were remembered (Loon, 2018; Oh & Abu Bakar, 2013).

### Self-progress and direction change

Students' personal growth was the aim of the academic program therefore, they were exposed to managing real patients so this practice will allow them to self-reflect throughout their clinical placement and helping them to make the required changes that will help them become better physiotherapists in the future. It gave them a comprehensive development, allowed them to view problems from several perspectives, and encouraged more mental and emotional self-development. A study by Loon (2018), confirmed that they were inspired to examine their views, values, character, self-perceptions, and fresh insights they had gained about themselves through this self-clarification process. Additionally, the students were able to create opinions on certain subjects, learn from their experiences, and improve themselves in a variety of aspects of their lives.

Since students will eventually become physiotherapists, it is imperative to encourage introspection in them from an early age so that it becomes a habit. To allow for self-reflection time, it is suggested that protected time be allotted within a defined structure for this kind of practice. Heads of physiotherapy departments should take this into consideration.

## VII. CONCLUSION

The physiotherapy students in this study have positive perceptions regarding self-reflection during clinical placements. It helps improve their professional behaviours, and awareness of the challenges and the need to learn and gain experience as much as possible in a clinical setting. Besides optimizing the learning experiences of students on clinical placement in ICU, this will also promote interest among the students in that field, then later become their career path in future.

It is imperative that clinical physiotherapy and an educator support and enable students' learning and offer prompt feedback, enabling them to respond promptly to their experiences.

## REFERENCES

Branch, W.T., & Paranjape, A. (2017). Feedback and reflection: teaching methods for clinical settings. *Academic Medical*. 77(12):1185-8. Available from: Lippincott Williams and Wilkins. DOI: 10.1097/00001888-200212000-00005.

Burt, E., & Morgan, P. (2014). Barriers to systematic reflective practice as perceived by UKCC Level 1 and Level 2 qualified Rugby Union coaches. *Reflective practice*. 15(4), 468-480.

Christing, A. (2022, December 22). *Why Reflection Is Important for Workplace Learning*. <https://cleancomedians.com/workplace-reflection/>.

Choy, S.C., Yim, J.S.C., Sedhu, D.S., and Nudin, A.B. (2021). Reflective practices for quality education in Malaysia: A mixed method approach. *International*

*Conference on Management, Social Sciences & Humanities (ICMeSH 2020)*.

Cottrell, S.M. (2013). *The Study Skills Handbook, 4th edition*. (Basingstoke: Palgrave Macmillan).

Davy, C. (2020). *Practising Self-Reflection to develop Self-Awareness*.

<https://www.allegraconsulting.com.au/blog/practising-self-reflection-develop-self-awareness>.

Dewey, J. (1904). *The Relation of Theory to Practice in Education*. In C. A. McMurtry (Ed.), *The Third Yearbook of the National Society for the Scientific Study of Education*. Part I. (pp. 9-30). Chicago, IL: The University of Chicago Press. <https://archive.org/details/r00elationoftheorynatirich>.

Ernstzen, D.V. (2013). Roles and attributes of physiotherapy clinical educators: Is there agreement between educators and students? *African Journal of Health Professions Education*. Oct 28;5(2):91-4.

Healey, W.E. (2008). Physical therapist student approaches to learning during clinical education experiences: a qualitative study. *Journal of Physical Therapy Education*. Apr 1;22(1):49.

Kolb, D.A. (1984). *Experiential learning: experience as the source of learning and development*. Englewood Cliffs, NJ: Prentice Hall.

Lindquist, I., Engardt, M., Garnham, L., Poland, F., Richardson, B. (2017). Physiotherapy students' professional identity on the edge of working life. *Medical Teaching*; 28(3):270-6.

Loon, M.H.V. (2018). *Self-Assessment and Self-Reflection to Measure and Improve Self-Regulated Learning in the Workplace*. *Hand of Vocational Education and Training*.

McMillan, K., and Weyers, J. (2012). *How to Improve your Critical Thinking & Reflective Skills (Smarter Study Skills)*. Paperback. Pearson.

Mudavanhu, E., Chiwara, T., Samson, C.S., & Tadyanemhandu, C. (2016). Undergraduate physiotherapy student perceptions of teaching and learning activities during the Intensive Care Unit clinical education block.

Nuraini, N.L.S., Cholifah, P.S., Mahanani, P., and Meidina, A.M. (2020). Critical Thinking and Reflective Thinking Skills in Elementary School Learning. *Advances in Social Science, Education and Humanities Research*. 10.2991/assehr.k.201112.001.

Oh, C.M., & Abu Bakar, N. (2013). Investigating the Areas of Self-Reflection in Malaysian Students' Personal Blogs: A Case Study. *World Academy of Science, Engineering and Technology International Journal of Cognitive and Language Sciences Vol:7, No:2*.

Reed & Jane. (1997). *Ground, Philosophy for nursing*. Arnold.

Rawson, M. (2000). Learning To Learn: More than a Skill Set. *Studies in Higher Education*.  
<https://doi.org/10.1080/713696137>.

Wijbenga, M.H., Thamar, J.H., Bovend'Eerd, & Driessen, E.W. (2019). Physiotherapy Students' Experiences with Clinical Reasoning During Clinical Placements: A Qualitative Study. *Health Professions Education* 5(2). DOI: 10.1016/j.hpe.2018.05.003.

Willmott, M.J. (2018). How and Why Do Undergraduate Physiotherapy Students Use Reflection in Learning and Practice? University of Western Australia.

Winkel, A.F., Yingling, S., Jones, A.A., & Nicholson, J. (2017). Reflection as a Learning Tool in Graduate Medical Education: A Systematic Review. *Journal of Graduate*

*Medical Education*. 9(4):430-439. doi: 10.4300/JGME-D-16-00500.1. PMID: 28824754; PMCID: PMC5559236.