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# Experiential Learning Values Based on Kolb Theory: A Qualitative Output in the School of Medical Sciences, Universiti Sains Malaysia

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## ABSTRACT

Clinical placements serve as workplace-based experiences, which is essential for medical students to develop their skills to become competent doctors. Multiple teaching and learning methods are implemented to achieve these goals, e.g. lectures, problem-based learning, simulations, community-based education, and work-place based learning, i.e. in hospital settings. Three online focus group discussion (FGD) were conducted to explore student's experiential learning in clinical placement. Thematic analyses were implemented to emerge the themes. Nine themes which were derived: authentic work-process experience, gaining insights from patient conditions, contextual feedback, conceptualised professional attributes, ideate future career, enhance self-regulation, practice communicative approach, practice collaborative learning and acquisition of clinical skills. The themes were discussed according to the phases in the Kolb experiential learning cycle. The findings can serve as the basis for reflection and feedback in clinical placements.

**Keywords:** *Focus group discussion, Experiential learning, Workplace-based, Clinical placement, Medical student*

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## INTRODUCTION

The goal of medical education is to produce competent doctors with cognitive, psychomotor, and affective skills in medicine. Multiple teaching and learning methods are implemented to achieve these goals, e.g. lectures, problem-based learning, simulations, community-based education, and workplace-based learning, i.e. in hospital settings. Among these learning activities, clinical clerkship is a crucial phase for medical students before completing undergraduate medical education, whereby medical students are placed in the "real world" as an exposure for their future careers. They are posted to clinics, wards, community, and district hospitals. They are given realistic tasks, often to clerk patients, perform clinical examinations, come to a diagnosis, and plan for further patient management. Students need

to interact with real patients and medical staff to achieve this task. They are also required to observe and perform clinical procedures such as venipunctures, deliveries, assist surgery, and other procedures. These are repetitive experiences from one patient to another in similar or different situations. These experiences are the learning process termed as experiential learning (1). Experiential learning theory is well-adapted for use in medical education as it increases learning from experiences by identifying the learner's strengths and areas for improvement. Experiential learning improves cognitive, psychomotor, and affective skills from previous experiences (as repetitive cycle) by identifying the learner's strengths and areas for improvement (2). Experiential learning theory augments an individual's understanding of their values, beliefs, and self-directed learning skills and provides feedback (3). The utmost crucial phase that will improve students' experiential learning is doing reflective observation to self-evaluate their experience. Based on the revised Kolb's experiential learning, it is very important for students to value their concrete experience in contextually rich experience (4). Therefore, this study was conducted to explore medical students' experiential learning values in the context of clinical experience.

### **The Kolb Experiential Learning Theory**

Generally, Kolb described that experiential learning lies within the following five features: (a) Learners are involved, active participants; (b) Knowledge is situated in place and time; (c) Learners are exposed to novel/meaningful/relevant experiences, which involves risk; (d) Learning demands inquiry to specific real-world problems; and (e) Critical reflection acts as a mediator of meaningful learning.

The Kolb theory consists of four stages as follows:

- a. **Concrete experience:** Focuses on being involved in experiences and dealing with immediate human situations in a personal way. It emphasises feeling more than thinking; a concern with the uniqueness and complexity of present reality over theories and generalisations; and an intuitive, “artistic” approach over a systematic, scientific approach to problems.
- b. **Reflective observation:** Focuses on understanding the meaning of ideas and situations by carefully observing and describing them. It emphasises reflection and understanding over action and practical application; a concern with what is true or how things happen over what will work.
- c. **Abstract conceptualisation:** Focuses on using logic, ideas, and concepts. It emphasises thinking rather than feeling; a concern with building general theories rather than intuitively understanding unique, specific areas; and a scientific more than an artistic approach to problems.
- d. **Active experimentation:** Focuses on actively influencing people and changing situations. It emphasises practical applications as distinct from reflective understanding; a pragmatic concern with what works rather than what is absolute truth; and an emphasis on doing more than observing.

A revised Kolb's cycle was introduced in order for learners to value their experience in context (5). The revised version consists of four stages, but each stage was redefined based on previous literature reviews and critiques.

In contrast with Kolb's previous theory, the revised theory emphasises more on the learner's involvement and engagement with the time, place, and person surrounding a specific situation. For instance, a clinical student who is placed in an orthopaedic ward will have to familiarise himself with the ward environment, from observation to involvement and interaction with working people in the ward. Subsequently, the student should make a critical reflective observation on the rich experience he just went through before moving on to the next stage, i.e. contextually-specific abstract conceptualisation (4). A learner needs to make conclusions from his/her reflections on their current experience and make them learn in terms of cognitive and psychosocial perspectives. Reflection is an important process in experiential learning theory. On the role of thinking and reflection on learning from experience, John Dewey wrote, "We do not learn from experience. We learn from reflecting on experience". Dewey defined reflection as "active, persistent, and careful consideration of any belief or supposed form of knowledge in the light of the grounds that support it and the further conclusions to which it tends". It was further explored by other experiential learning theorists, including Kolb. The revised Kolb cycle also emphasised critical reflection to serve as a meaningful evaluation.

## **METHODOLOGY**

### **Study Location and Population**

Focus group discussion (FGD) was conducted in the School of Medical Sciences, Universiti Sains Malaysia (USM) through the Google Meet platform due to the COVID-19 pandemic situation. The reference population was the medical students at USM.

### **Study Setting**

The undergraduate curriculum in the School of Medical Sciences consists of a preclinical phase (year 1 to year 2) and a clinical phase (year 3 to year 5). This study focused on the clinical phase, exploring students' experiential learning during clinical placement. In the clinical phase, students are divided into clinical placements in the Hospital USM. Students are posted in workplace-based settings such as clinics, wards, operation theatres, emergency departments, labour rooms, and community health clinics. The subjects went through these placements around two years before COVID-19.

### **Sample Size Estimation**

For FGD, the sample size was determined by saturation concept (5).

### **Sampling Method and Subject Recruitment**

Participants were selected using a purposive with homogenous sampling method. The subjects were USM Year 5 medical students of academic session 2020/2021. A name list of the students was obtained from the academic office. The batch group leader was approached to send an invitation to all students. A brief introduction about this study was included in the invitation message and email. Students who volunteered to participate in the FGD were randomly grouped into groups consisting of five to eight participants per group.

## Research Instruments

An FGD semi-structured interview protocol was developed to guide on the FGD. An audio recorder was used to record the FGD session.

### FGD procedure

The following questions were used as probing questions during FGD:

- a. What are the experiences that you gained during clinical postings?
- b. Do you think clinical postings are important? Why?
- c. What do you learn during clinical postings?
- d. What are the values that you gain from clinical experience?

### Data Analysis

The audio recorded FGD was converted to verbatim transcripts. The verbatims were coded and themed manually by three researchers. This involved sorting and assigning data into categories. Themes were generated through combinations of similar categories that represent experiential learning.

## RESULTS

A total of 14 fifth year medical students agreed to participate in three FGDs. The thematic analysis yielded nine themes of experiential learning values in clinical placements as shown in Table 1.

**Table 1:** Themes and subthemes of experiential learning values during clinical placement

Themes	Subthemes	Example of FGD quotes
Theme 1: Authentic work-process experience	Managing consultations	We record (patient's condition) to the SMR (student medical records) so we really need know about the patient and the progress of the patient. (FGD1, StARS)
	Managing treatment plan	We saw which investigations are practical to be done. (FGD1, StAR)
	Awareness to promote healthcare	During health promotion in community medicine posting, that gave me a holistic awareness on Down Syndrome and also all the syndromic babies. (FGD3, StGD)
Theme 2: Empowering resilience skills	Dealing with emotionally challenging situations	I felt that the logbook requirements actually push me to conquer my fear of doing that not only for bladder catheterisation. (FGD1, StARS)
	Build self-confidence	Get in to the housemanship later, I don't have to rely much on our senior in order to for us to learn how to conduct delivery. (FGD1, StAK)
Theme 3: Empowering ethics and professionalism	Understand professional role	So there (district health clinic), we experience how the doctors manage the patient by primary care. It is quite different hospital as the tertiary care. (FGD3, StNR)
	Positive role model	Doctors really train us to ask patient as a whole, not only at the physical things on patient. They also teach us to think on sociality. (FGD1, StBT)

(Continued on next page)

**Table 1:** (Continued)

Themes	Subthemes	Example of FGD quotes
Theme 4: Empowering feedback for reflection	Feedback on behaviour-oriented	I say to them it's okay we are in university, so we are going to learn something. For me, it's okay of feeling ashamed. (FGD2, StAZ)
	Feedback on specific instance of behaviour	Medical officers give feedbacks on our bedside presentations. (FGD2, StIZ)
	Constructive/ corrective feedback	Whenever I present a case or physical examination, a doctor corrects me. (FGD2, StND)
Theme 5: Empowering communication skills	Confidence in communication skills (6)	But after I experienced some clinical (situation), where we need to talk a lot with strangers, I mean the patient are strangers for us, so I can develop my communication skills very well. (FGD3, StAS)
	Importance of communication skills	We should listen carefully to whatever patient is saying and don't think them as a deviation because they might actually telling the diagnosis. So, it is essential to listen to everything that they were sayin. (FGD1, StSS)
	Growth in communication skills	Spending threee years (in clinical phase), I realise my clerking skills have been better due to my communication skills. (FGD1, StAR)
Theme 6: Empowering empathy	Understand patient's condition	Her parents tried to strengthen their heart to see their child every day until their child's last breath. So, it's quite saddening for us to see during the NICU posting. (FGD3, StNR)
	Knowing patients through multiple contexts	So, we treat the patient differently according to their socioeconomic status. So, it is important to know their status as well. (FGD1, StSS)
Theme 7: Academic and future career development	Teaching others	Your friends definitely teach you or learn something from you also. (FGD3, StKY)
	Career aspirations and future direction	So, I feel like it really change my views on surgery. So, I feel like that actually plays a big role whether or not I really considering that posting for that my future. (FGD1, StBT)
Theme 8: Empowering teamwork skills	Leadership and problem solving	Usually, it also be something that my friends do not know as well. So, we would like immediately search on our phones or it like something complicated, we will go back and try to read up on it. (FGD1, StARS)  In this medical profession it so important to share (problem to others). So important to work together. (FGD1, StAR)
Theme 9: Acquisition of clinical skills	Patient continuity of care	We record (patient's condition) to the SMR so we really need know about the patient and the progress of the patient. (FGD1, StARS)
	Diagnostic and management	They give us the additional knowledge on what happened if we don't do this fast enough or if you prolong this procedure or what can happen if you do this wrongly (managing placenta delivery). (FGD1, StARV)
	Clinical procedural skills	We have the advantage conducting deliver with help of the HO and MO. (FGD1, StAK)
	Complex clinical reasoning	In the emergency posting they are children who come with bruises. We should think if patient is victim of abuse. (FGD1, StBT)

### **Theme 1: Authentic Work–Process Experience**

During clinical placement, students observed the patients' consultation and treatment plan process. Apart from that, promoting healthcare awareness is another important part in which students gain through primary care and community care settings. The challenging work process requires students to solve a real-world problem or engage in career-focused tasks that directly mirror the interesting conundrums they might face in this profession.

### **Theme 2: Empowering Resilience Skills**

During clinical placements, students observed and experienced many uncertain situations, which developed their resilience. Subsequently, they learned to cope with self-anxiety and emotionally unpleasant feelings. As a result of these repeated encounters, students developed self-confidence to encounter uncertainty during clinical placement.

### **Theme 3: Empowering Ethics and Professionalism**

Students were exposed to multi-professional roles and ethical practice in medicine by observing other professions in real workplace settings. Students also realise that doctors act as role models, which allows them to understand professional roles, respect, and interprofessional practice in the medical profession.

### **Theme 4: Empowering Feedback for Reflection**

Experience in clinical settings earned students receiving and giving feedback, with specific comments on their behaviours, skills, and personality. Apart from receiving feedback, students get further clarification and sufficient examples to improve.

### **Theme 5: Empowering Communication Skills**

Students grow and improve their communication skills through multiple interactions with patients and others. The authentic working environment exposed students to unexpected situations, which made them aware of the importance of good communication skills and stimulated their growth in communication, such as questioning and listening skills, thus increasing confidence in communication skills.

### **Theme 6: Empowering Empathy**

In interaction with patients with multiple backgrounds and illnesses, students were able to understand patients' conditions in multiple contexts and conditions. Students went on home visits and saw their real living conditions, thus making them understand their life struggles.

### **Theme 7: Academic and Future Career Development**

Students conceptualised that a medical career has a broad angle they may explore in the future, such as research and publications. Apart from that, they also experienced that teaching others during clinical placement was important for their academic development,

even during working days. On the other hand, students observed senior doctors and specialists' practices during clinical placement, which was an aspiration for their future career plan.

### **Theme 8: Empowering Teamwork Skills**

In the workplace environment, students observed and were involved in a team. They applied leadership skills and were involved in problem-solving.

### **Theme 9: Acquisition of Clinical Skills**

Students could actively perform clinical procedural skills, history taking, and clinical examinations of real patients. Subsequently, they observed and assisted the treatment and management plan, thus learning about complex clinical reasoning and continuity of care.

## **DISCUSSION**

These FGD findings demonstrated that all nine themes of experiential learning values in clinical placements embraced the four phases of the Kolb theory.

### **Contextually Rich Concrete Experience**

This stage focuses on personal experiences and dealing with immediate human situations through observation and presence. It emphasises feeling more than thinking, which concerns the uniqueness and complexity of present reality over theories (4). Commonly, medical courses provide simulation experience on certain topics during the preclinical phase, which prepares them for clinical placement dealing with real patients (7-9).

Ethics and professionalism are taught in lectures and demonstrations in role plays, video shows, and medical movies (10, 11). Clinical placements serve as another platform for students to observe, analyse, conclude, and relate their observations on ethics and professionalism. More contact-time with medical personnel has made students aware of the importance of professionalism in medical practices (12). In this study, students perceived a role model as one who practices interprofessional roles, has good interactions, treats others with respect, and is knowledgeable during clinical placements.

Resilience among medical students is in growing debate. Clinical placements have been reported as a major factor contributing to resilience (13). However, on the other hand, Shatté et al. (14) emphasise that exposure to the workplace environment serves as an adaptation that helps to build resilience. In clinical placement, repeated encounters with unexpected people and situations indirectly empowered students' coping mechanisms while dealing with uncertainty (15). Uncertainty is a major cause of mental strain during clinical years, which includes feelings of insecurity of professional skills, own credibility, fear of making mistakes, coping with responsibility, and tolerating oneself as incomplete and accepting oneself as a good-enough doctor-to-be (16). Recently, Stephens et al. (17) found that students experience a wide range of uncertainties during clinical placements, in which they suggested that educational interventions on uncertainty tolerance should be developed specifically for clinical uncertainties relevant to students' stage of learning.

The learning process through this phase is an intuitive and “artistic” approach over a systematic, scientific approach to arising problems. The knowledge, theories, and simulation of being with “patients” during the preclinical phase is transformed into a real-world context, i.e. being with patients, relatives, and other health workers in clinical placements.

### **Critical Reflective Observation**

Reflection upon rich experiences during clinical placement makes students reorganise their pieces thoughts and feelings into a meaningful view. While having all their senses during clinical placements, students went through a broad spectrum of live scenarios on top of medical problems per say. They feel and observe a new environment, meet new people, and are followed by repeated encounters in similar contexts to familiarise clinical placement. Thus, the presence of other health workers in clinical placements, especially clinical tutors, supervisors, and colleagues, may provide constructive feedback for medical students.

Although students reported that writing reflective journals was not preferred, it was beneficial for their personal and professional clinical learning, whereby it predominantly made them aware of their thoughts, feelings, and behaviours, building confidence and helping them both personally and professionally (18). By receiving feedback from different angles, students can observe their progress in learning and ascertain their strengths and weaknesses (19). Furthermore, students can develop more effective critical thinking skills by questioning and analysing their own and others’ behaviours; thus, students begin to understand themselves and can be more self-critical in a positive way (20, 21). These experiences reflect the phenomena of reflection as described by John Dewey that reflection was a necessary precursor to action. On top of that, the reflection and feedback processes which were described by students support the theory on reflection-on-action and reflection-in-action by Donald Schon (22).

In medical education, the assessment of experiential learning in a clinical setting is often described as a workplace-based assessment. O’Toole (23) describes that assessment of experiential learning in clinical clerkship can be conducted as a learning contract, whereby students negotiate their assessment strategies and placement goals with supervisors. Finally, students must write reflections from experience. Reflection of learning and reflection for learning are relevant in experiential learning as it is a cycle that students go through. According to Kolb experiential learning theory, the reflection of learners’ experience (i.e. the reflection of learning) will help them to plan for the next learning cycle (i.e. reflection for learning).

### **Contextual-Specific Abstract Conceptualisation**

Abstract conceptualisation is the consequence of the previous phase, critical reflective observation. This FGD revealed that students ideate their future careers in medicine. Being placed in a workplace-based environment, students reflect on the concept of their future careers as doctors as individuals who treat patients. Another role of being a doctor also involves research and publications, and teaching others. In the experiential learning cycle, these concepts make students plan their actions for self-improvement for the next phase, active experimentation (4). Recently, a framework of resident teachers has been developed in the context of medical education (24). This framework addresses two major roles of residents, as instruction and assessment roles. While, the sub competencies include knowledge transfer through teaching and publications, which were similarly found in this



study. Thus, clinical placements create a supporting culture for residents-teacher roles, as suggested by Liang et al. (24).

### **Pragmatic Active Experimentation**

Pragmatic active experimentation is the phase whereby students are actively involved in doing rather than observing, thinking, feeling, reflecting, and conceptualising (4). This study shows that communication, empathy, teamwork, and clinical skills are practiced during clinical placement. Interestingly, it was found that teamwork skills, empathy, and communication skills are essential in nurturing medical students' professional identity during community placements (25).

As medical students are designed to become medical practitioners, communication skills and empathy towards others, including colleagues, superiors, and patients, are very much in need for personal competency (26). Koponen et al. (27) found that students improve their communication skills during experiential learning activities as the training progresses, which also reflects the purpose of experiential learning. Theories of communication skills are taught, but to ensure it is embedded in students' personal and professional development, it needs practices such as simulations, role plays, and even virtual patients (28, 29).

Despite the increasing importance of teamwork in healthcare, teaching and learning on teamwork still fall under hidden curriculum (30). Students develop teamwork skills during experiential learning, which involves completing tasks in a team. For example, community-based projects, service-learning projects, and many more.

Apart from the abovementioned skills, clinical skills are developed with repeated encounters with similar procedures on different patients. Clinical placement is a huge opportunity for students to unlearn and relearn their clinical skills such as history taking, physical examination, venepunctures, electrocardiogram, etc. However, students achieve these competencies gradually through adaptation to new clinical placement by multiple observations through experiential learning (31). Therefore, Prashar et al. (32) shared tips to improve clinical skills and to engage in reflective practice, including discovering ways to facilitate further occasions for clinical skills learning and making the most of clinical skills learning chances during experiential learning in clinical placements.

### **CONCLUSION**

Clinical placements serve as a concrete experiential learning platform for medical students to gain many values, including cognitive, psychomotor, and affective skills. This study yielded nine themes that fulfil the four phases of experiential learning theory by Kolb. This study's findings may serve as the basis for medical students' experiential learning self-reflection in clinical placements.

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## ETHICAL APPROVAL

The study was approved by the Human Research Ethics Committee USM (USM/JEPeM/20100523).

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