

Review Article**Experiential Learning in Clinical Education Guided by the Kolb's Experiential Learning Theory**

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Abstract:

In clinical education, experiential learning can be an important component of the instructional process. We know that in medical college hospitals, learning that takes place at patient's bed side or in wards is totally different from learning that takes place in the classroom. Each patient encounter is a new learning experience where new information is internalized and applied in the context of previous knowledge and experience. This emphasizes the importance of experiential learning where medical students should have the opportunity to effectively and efficiently internalize, process, and apply new information. However, a major global challenge for the clinical education is the workload placed on the clinical teachers, who struggle to divide time between clinical, teaching, administrative, and other duties. Experiential learning helps to form an integrated approach to clinical teaching that simplifies the relationship between a physician's clinical and educational duties and erase the distinction between teaching and patient care duties; the students are also benefited. Kolb proposed experiential learning theory, a four-stage cyclical model of knowledge development that combined individuals' conscious recognition and transformation of experience, which was first published in 1984. Experiential learning can be applied throughout the medical educational environment by institutional development programmes, including longitudinal outcome assessment, curriculum development, student development, and faculty development. The use of experiential learning, where students are purposefully engaged in direct experience with an emphasis on reflection, increases the ability of students to develop clinical skills and competences during their clinical phase of medical education. This review paper aims to discuss how experiential learning can be integrated in clinical education.

Keywords: Experiential learning, clinical education, clinical skills, teaching and learning, medical education

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Introduction

In clinical education, in which we are engaged in different medical colleges of Bangladesh, experiential learning can be an important component of the instructional process. In a

conventional or traditional classroom, it usually tends to place the learning emphasis on the instructor who provides theoretical information, while the learners absorb all the facts and try to apply them to an upcoming MCQ, written or

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practical test. We admit that students need certain basic knowledge from education; however, the way of acquiring that knowledge in traditional teaching and learning in medical colleges often limits students' ability to transfer skills to a clinical setting.^{1,2} Experiential education or learning can be one of the key methods to effectively teach adult learners especially in clinical rotation. In clinical education, experiential learning accumulates methodologies in which educators purposefully engage with learners in direct experience and focused reflection to increase their knowledge, develop skills, clarify values, and enhance learners' capacity to perform better in clinical settings or in private practice.^{3,4} We know that in medical college hospitals, learning that takes place at patient's bed side or in wards is totally different from learning that takes place in the classroom. Each patient encounter is a new learning experience where new information is internalized and applied in the context of previous knowledge and experience.³ This emphasizes the importance of experiential learning where medical students should have the opportunity to effectively and efficiently internalize, process, and apply new information. However, a major challenge for the clinical phase of medical education not only in our country, but also worldwide, is the workload placed on the clinical teachers, who struggle to divide time between clinical, teaching, administrative, and other duties.^{3,5} Experiential learning helps to form an integrated approach to clinical teaching that simplifies the relationship between a physician's clinical and educational duties, and erase the distinction between teaching and patient care duties; medical students are benefited more.^{4,6,7} This review paper aims to discuss how experiential learning can be integrated in clinical education to facilitate both the teachers and the students in clinical phase of medical education.

Experiential Learning in Clinical Education

The concept of experiential learning can be seen as far back as the teachings of Confucius around 450 BC: "Tell me, and I will forget. Show me, and I may remember. Involve me, and I will understand."⁸ This is very true for clinical teaching in the hospitals. Clinical education includes a professional practical experience that is essential for medical students achieved through an apprenticeship model.⁹⁻¹⁰ This largely reflects the social-cultural learning theory. This hands-on experience is invaluable to students as they learn

what will be expected of them upon graduation.¹⁰ Clinical supervisors, or clinical assistants to the supervisor are usually the "experts" at the hospital facilities in our country; they mentor students to help bridge the gap between classroom and practical application.¹⁰⁻¹² In recent times, addition to on-site practical application, many clinical programs include simulations to teach different clinical examinations and procedures.¹³ To make it more engaging, live class sessions may also include in-class analyses of case studies, encouraging problem solving through group discussions.^{10,11,14} Many courses tend to use more behavioral and cognitive learning theories in teaching basic terminology, structures, and processes; as students embark on more discipline specific learning within their courses, those classes need to offer more social-cultural and experiential learning opportunities to make it more fruitful.¹⁴ In order to prepare for the often unpredictable and stressful nature of a healthcare setting, it is important that students are exposed to real world scenarios in a safe clinical environment that allows for mistakes and learning opportunities to be made. In addition to expertise in clinical skills, a communication and collaboration skill mastery is also an essential part in clinical education.¹⁵

The acceptable practices in clinical education require a framework for understanding the content, processes, and skills necessary to provide safe, quality patient care and support.^{4,6,15} Although instructors make connections to help students find meaning and better retain information, experiential learning is the key to connecting the classroom and the clinical setting.^{3,4} The professional practicum is an essential component of clinical education, but it alone would not work as students would be ill-prepared when entering facilities and clinical supervisors do not have the time to start at the basic level.³ It is expected that the student has the basic professional skillset and will be able to be partly self-sufficient. To build this confidence and skillset, students need to be provided experiential learning opportunities within the classroom.^{3,7} Such experiential learning opportunities can be time-consuming and expensive to create, but collaboration amongst faculty can lighten the burden. Experiential learning also enhances the interpersonal component of working within a group or team.¹⁵

Klob's Learning Theory

David Kolb's influential book entitled 'Experiential Learning: Experience as the source of learning and development' defined learning as a "process whereby knowledge is created through the transformation of experience", as published in 1984. He proposed a four-stage cyclical model of knowledge development that combined individuals' conscious recognition and transformation of experience.¹⁶ The four modes of adaptive learning that constituted his cycle (Figure 1) were: 'concrete experience, reflective observation, abstract conceptualization and active experimentation'.¹⁷

The learning cycle diagram represents that knowledge is the result of grasping and transforming experience. In this model, experience is grasped through concrete experience (experiencing) and abstract conceptualization (thinking); thereafter, experience is transformed through reflective experimentation (reflecting) and active experimentation (acting). This model is presented as a learning cycle or spiral, in which learning touches all four components and the outcome is based on the tension created between all four components. Immediate and concrete experience (acting) are based on reflection and observations. The reflections lead to new concepts that eventually lead to new implications and the cycle continues.¹⁸⁻²⁰

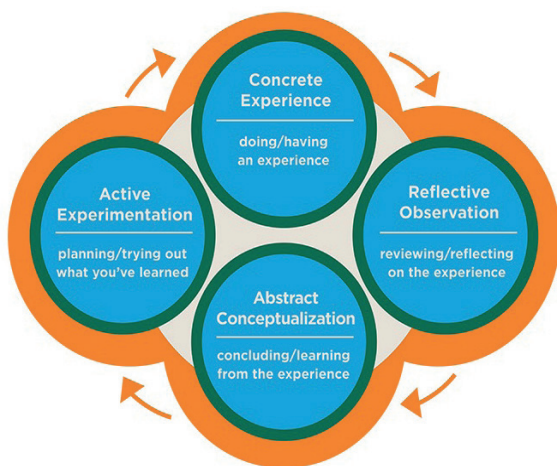


Figure 1: Kolb's Experiential Learning Cycle²¹

Thus, experiential learning can be applied throughout the medical educational environment by institutional development, e.g. curriculum development, longitudinal outcome assessment, quality assurance, student development, faculty development and continuing education.²²⁻³³

How to Integrate Experiential Learning in Clinical Education

Medical students in our country usually start to come to the hospital wards in the morning and evening time in their 3rd year of study. It is a rotation programme to learn clinical skills; facilitators are available to conduct bed-side teaching. Student may or may not have some prior clinical knowledge and skills that they have gained through their previous experience through books, manuals or videos. Although, their clinical expertise may vary based on prior areas of experience, new ideas and abstract concepts are expressed by almost everyone, even being at a novice level (abstract conceptualization). Such new ideas or abstract concepts will eventually be applied in their clinical settings under the supervision of a registrar or someone from professorial level (active experimentation) and produce solid learning experience (concrete experience). Students who take time to reflect on their learning experience (reflective observation) will develop new ideas at their knowledge, attitude, and skill; thus, the learning cycle continues. In this clinical education curriculum, experiential learning principles are used to assist students in getting a better understanding of their learning process and to effectively combine their intellectual skills with clinical experience for achieving the best learning result in a systematic pattern.^{12,13} The post assessment tools that are used with each ward/module may also assist facilitators in evaluating the teaching-learning outcome in an effective manner.³³⁻³⁶ Kolb's Experiential Learning Theory can be used to guide simulation-based clinical education as well, offering both a foundation and process for knowledge acquisition based on the needs of each individual learner.^{13,20,25,26,32}

According to Kolb's theory, we have tried to describe four different kinds of abilities³³⁻³⁶ that our learners need to show while learning from experiences they get in clinical classes (Table 1).

Table 1: How to integrate learners' ability with their experience in clinical education

Abilities to learn in Kolb's cycle	Clinical experiences
1. Concrete experience: As learners are open and willing to involve themselves to get new experiences.	The student is assigned a patient in a clinical rotation. He/she takes history, performs physical examination, develops differential diagnosis and a plan.

Abilities to learn in Kolb's cycle	Clinical experiences
2. Reflective observation: Learners' ability to think about what has been observed during the new experience.	The student 'makes sense' of what he/she has observed. He reflects on the clinical encounter. At this learner level, this is best achieved when it is triggered by feedback from a more experienced clinician (a registrar or assistant /associate /full professor). The student must be given feedback.
3. Abstract conceptualization: It is also known as "figurative representation" and "transformation of that representation of experience".	The student uses the reflection to self-improve his/her knowledge, physical examination techniques and problem-solving skills. A student identifies what is needed to learn to build on existing knowledge and gets engaged in active learning through self-directed learning (SDL). Reading about each encounter will enrich the learning. The illness might be similar to a previous experience; however, each individual patient and the contextual background might add a new perspective to the encounter.
4. Active experimentation: Learners try out for themselves, what they have learned in response to different experiences.	The outcome of feedback and the SDL helps a student to experiment with a new approach (e.g. problem solving skill, physical examination technique) and test it on a new experience. The new experience may generate a new reflection and a new approach.

Conclusion

The use of experiential learning, where students are purposefully engaged in direct experience with an emphasis on reflection, increases the ability of students to develop clinical skills and competences during their clinical phase of medical education. The acquired skills for them will become increasingly useful as they continue to face challenges in their internship training in communication with patient, history taking, diagnosis and management while providing optimal patient care in the hospital settings, and also in private practice thereafter.

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