

Practical teaching can be carried out in a number of ways; however, it is common to break these up into individual activities or experiments. If we think about one of these individual experiments, then we can layout the process undertaken by students on Kolb's learning cycle.

Abstract conceptualisation is the process of making sense of what has happened and involves interpreting the events and understanding the relationships between them. At this stage the learner makes comparisons between what they have done, i.e. their previous experiences, and reflect upon and what they already know. They may draw upon theory from textbooks or lectures, around topics they have been told will be relevant for the lab. For all intents and purposes the learner is starting the preparation for the experiment. The knowledge of the background theory is then linked to the experimental equipment.

At this point the learner moves into active experimentation and they consider how they are going to put their knowledge into practice. Planning enables taking the new understanding and translates it into predictions as to what will happen during the experiment. These ideas enable an experimental procedure to be developed and refined during the experiment task. Many experimental units at a lower level tend to provide an experimental procedure to scaffold students through this process.

During the experiment and analysis students have an active involvement where they engage with concrete experience. This active involvement is the key to learning and one of the reasons why practical teaching is undertaken. In Kolb's model one cannot learn by simply watching or reading about it, to effectively learn the learner must actually do. This stage is originally thought of as the start of the cycle.

After analysing the results and report writing, or undertaking the relevant assessment, then there is reflective observation to review the task. Again, we often help to scaffold this process by making the assessment include discussion and evaluation sections, and then provide feedback on the learners practice. In an ideal world the learners cycle then starts again using these experiences and feedback to help develop their processes for the next experiment.