The Learning Matrix

David Kolb describes experiential learning as a combination of education, personal development, and work. The workplace is a learning environment that enhances formal education encouraging personal development through meaningful work and career-development opportunities (Kolb, 2015). Importantly, this forms the basis of life-time learning, which is vitally important for systems engineers' career development. Kolb's Experiential Learning Circle (Figure 1) can be considered as a four-stage cycle made up of four separate learning styles. In general, individuals will prefer one or more styles over the others, and it is helpful to identify your preferred style and then try to strengthen the other styles so that you can become a more effective learner.
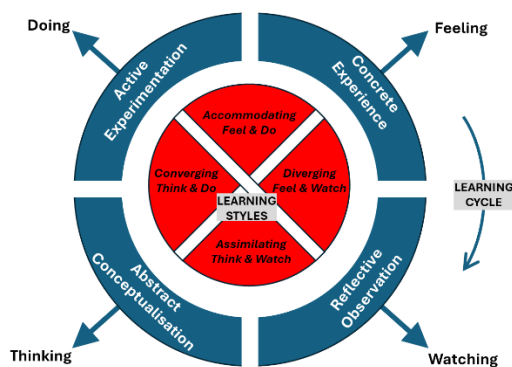

Figure 1: Kolb's Experiential Learning Cycle (adapted, from (Kolb, 2015)*)*

Although everyone is different, generally Engineers tend to favour the active experimentation and concrete experience learning styles. The purpose of the Learning Journal is to develop reflective practice: this should help you to challenge assumptions, take ownership of your own learning, and develop emotional intelligence.

Learning Journal

At Master's level, students are expected to demonstrate that they can plan self-learning and improve performance, as the foundation for lifelong learning (i.e. Continuing Professional Development). The purpose of the Learning Journal is to both develop and, eventually, demonstrate this ability. The journal may be in electronic or hand-written form, but if it is hand-written, then it must be scanned for electronic submission. A learning Journal is a tool to help you take control of your learning experience; it should not be confused with a logbook, which is an important part of a project, but serves a different purpose. A Learning Journal is, essentially, an opportunity to take time to reflect on your learning experience. It is intended to be applied in your modules, work, and all aspects of your journey on the MSc. (and apprenticeship). In this activity, we encourage you to take time out about once per week to reflect on your development. The entries you make in the learning journal may concern systems engineering and systems thinking experiences, but we would anticipate they also concern aspects about your professional behaviour and how you deal with others.

Format

There is no definitive format for a Learning Journal, but it should consist of a set of "experiences" upon which you reflect. So typically, an entry might include:

• Date

• The experience (name, e.g. a process, technique, theory, or activity)

• Brief description (maybe include references if it is defined by documents, or description of what happened for an experience; you might name the people involved)

• What insights did you gain (things you had not perhaps thought about before)

• What helped or hindered your learning (could be anything from the able person with whom you worked to a personal lack of sufficient maths knowledge)

• What your future strategy would be if you did this again (i.e. what would you repeat, what would do differently?)

• What questions this experience has inspired for which you may seek additional learning?

Mostly the experiences you record will be relatively substantial ones; they may be planned or unplanned.
Try to keep the journal entries to essential information; you don't need to write an essay for each experience.

Crucially, we are expecting to see critical thinking applied to the reflection, not simply a description of what happened.

Practice
Set aside time to think about the experience and exercise reflection. Being self-critical is good, because it helps to reinforce the learning from the experience.
Sometimes it is helpful to share your experience with others (fellow students, supervisors, mentor, etc.) to help analyse the experience in more detail.
Don't be afraid to go back and make additions if further reflection makes you think differently about the experience.
If your reflection inspires new questions, then go and find the answers.

Submission of Learning Journal
The Learning Journal is due for submission on the following dates:

Instance 1	Instance 2
3pm on Wednesday 7th January 2026	3pm on Wednesday 14th January 2026
Submission **LINK**	Submission **LINK**

Marking Criteria
The Learning Journal is worth 10% of the overall module marks.

Typically, we would expect about eight entries of about half-page each. We hope that you will continue with the journal beyond the marking deadline.

	Clarity of description (is it clear and concise?)	10%
	Analysis (evidence of critical thinking)	30%
	Reflection (demonstrates awareness of meaning of learning)	20%

	Reflexivity (understanding of one's own reasons for behaving in a certain way, i.e. understanding one's own motives and biases)	20%
	Actionable Learning (to what extent has the learning changed the engineer for future activities?)	20%

Reference

Kolb, D. A. (2015) *Experiential Learning*. Upper Saddle River, NJ: Pearson Education.