Designing Intended Learning Outcomes

Enactivism: Knowledge is our capacity to act adaptively!

Components of an ILO

An ILO (*Intended Learning Outcome*) is an intention to increase knowledge. Since learning is enactive, and enaction views knowledge as fundamentally based in competent (i.e., situated, adaptive) action, this means ILOs are an intention to increase *competence*. That is, we are intending to move learners (possibly students, but equally possibly myself, a project group or the readership of a research paper) from one specified state of competence to another.

An ILO describes a particular unit of learning – whether that is a degree programme, a course module, seminar, research project or explanation. All ILOs involve these components:

1. The *learners* whose competence we intend to increase.
2. A *narrative* purpose that motivates the need to learn.
3. A *model* that provides the content of what learners will learn.
4. The *enactivities* that specify the process of the new competence.
5. A *class* of contextual situations in which learners will enact the new competence.
6. *Clarity* of language for lay, second-language learners.

Writing an ILO

Who are the learners? What prior competences do they bring to learning?

First ask yourself: *Whose competence am I intending to change?* Are students going to learn something that I know? Am I going to learn something somebody else knows? Am I going to learn something by investigating it? What competences do these learners already possess?

Seminar example: *My first-year students can perform straightforward algebraic manipulations, including the binomial multiplication and finding the gradient of a straight line.*

Research example: *The members of our research group can program significantly complex software in Julia, including agent-based modelling.*

What narratives drive the intention of learning?

Now ask: *Why am I offering this unit?* How does it contribute to the ILOs of its overarching unit? What would you like successful learners to say they gained from this unit? Which intellectual and practical skills will every learner gain through having participated in the unit?

Seminar example: *Successful learners will understand the role of derivatives in calculating the gradient of a curve, and their importance for explaining change in biological systems. They will be able to explain the concept of a limit, and understand the relationship between gradient and small increments of time and quantity.*

Research example: *At the end of our project, we will understand how exploratory processes augment structural (genetic) search to accelerate adaptive search.*

What structural model will learners acquire?

Ask: *What is the content of the unit?* What model structures are presupposed by the narratives? What are the constant, or covariant, rules and classes of the narratives?

Seminar example: *The definition of a derivative, its use in calculating gradients and predicting motion.*

Research example: *The influence of exploration on structural search.*

Which enactivities characterise the learning?

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