

3 A brief introduction to theories of learning

The concept of ‘pedagogy’

Many of our ideas of teaching and learning originated in Europe around the late 18th Century. This was the period known as the Enlightenment, centering on a belief that the world would improve if people relied more on knowledge and reason instead of simply trusting the authority of governments and churches. The key word was *Bildung* – education in the broadest sense, the shaping of an adult human being, personal and social development.

The understanding of how to do this was known as *pedagogy*, so this involves more than just a set of ‘teaching methods’. It is much more than transmitting knowledge, although it necessarily involves extending people’s knowledge from what they acquire in their family to a wider public knowledge system and learning how to use the powers of reason. Pedagogy is helping the young to find their way in the world, to reach maturity equipped with values as well as skills. It is about knowing how to fit in but also knowing when to refuse to fit in to a pre-existing reality, when to challenge and change it.

Transmitting knowledge or helping learners to (co-)construct it?

The most basic exchange of information can be seen in terms of an expert transmitting or ‘delivering’ it to novices, whether by lecturing them or by instructing them in a skill. A ‘scientific’ theory was built up around this by researchers who saw human learning in terms of the ‘conditioning’ of captive animals (dogs, pigeons etc.) to do unusual things. This involved multiple repetitions and was reinforced by rewards or punishments. The theory was known as *behaviourism*, with Pavlov and Skinner as its most famous proponents.

Although this model fits certain kinds of school learning – chanting multiplication tables, for example – and the rewards which reinforce it make up for a lack of intrinsic interest and satisfaction – it is never very thoughtful, and does not provide an adequate model for more complex learning. This approach is often described as *teacher-centred*.

Constructivists such as Piaget observed how children interact with nature and natural events, gradually building up a theory which matches reality. The basis of this is the interaction of all organisms with their environment. The process often involves adding new examples to the theories we already have (*assimilation*), but it can also involve having to change our theories because new events simply won’t fit (*adaptation*).

Piaget’s basic model of constructivism is built around individuals learning through experience, rather than an interaction between teachers and learners. It implies a role for the teacher of setting up *environments* in which learning can happen. It is *learner-centred*.

Vygotsky's version of constructivism places a stronger emphasis on the ways in which things made by other people, and symbols (particularly language) which we share with others, assist our learning. The learner's encounter with objects and events is 'mediated' by tools such as tape measures, thermometers and telescopes, but also by the words we use - another kind of 'tool'.

This form of constructivism was less individualistic, so it is often called *social constructivism*. In fact, it is social in three different ways:

- other people before us have invented the tools
- we inherit language and other kinds of symbolic representation (e.g. algebra, maps) from our culture
- we engage with other people in a learning process, including dialogue with teachers or other more experienced partners.

This way of thinking about learning has proved very rich, and been extended under headings such as 'activity theory' or 'situated cognition'. This has even altered the ways in which researchers think about 'mind' – as more than just the individual brain, mind is seen as 'stretched' between our bodies and sensory systems, the immediate environment and the symbolic systems such as language which we inherit from the past.

Social constructivism focuses on the learner(s) but cannot simply be seen as 'child-centred'; it is fundamentally about *interaction and dialogue* between teachers and learners.

Engaging in dialogue

Teaching as transmission generally involves quite basic forms of communication: repetition, copying, answering simple questions to prove that we know the right answer.

Researchers in the 1960s and 70s, observing in classrooms, began to notice the frequency of some basic patterns of language use. For example, they noticed that teachers did most of the talking, often as a solo performance. They perceived that teachers asked all the questions and children rarely did (compared with out of school when children never stop asking questions). They noticed that many of the teacher's questions weren't genuine, but simply a test – the teacher already had the answer (unlike questions in real life). They spotted that most of the teacher's questions were 'closed' and 'low level'. This raised concerns about the learner's passivity and lack of agency, but also about the limited cognitive challenge – these patterns often didn't help learners to think.

Some noticed that a different kind of learning happens when the teacher is not directly involved, that there was a richer and more thoughtful interaction. This connected back to, and modified, ideas about social

constructivism derived from Vygotsky. The word *dialogic* came into use to describe this richer form of exchange, whether between pupils or between teacher and pupils. Another Russian thinker Bakhtin had provided theories of communication concerning dialogic exchange. This doesn't mean that the teacher's exposition and presentation of ideas is unimportant, but stresses the need to engage listeners as active and thoughtful participants.

Being 'critical' and looking at alternatives

Dialogic forms of communication are built around differences of thinking and perspective. This difference helps us to appreciate that there are different ways of seeing the same thing, that we might need to challenge 'common sense' in order to get nearer the truth. This is true when building scientific ideas about the natural world, but equally in terms of how we think about society, relationships, values.

Sometimes we have to look beneath the surface. Bhaskar's concept of 'critical realism' involves the understanding that forces are present below the surface whose effects are not always apparent. For example, balloons and feathers float and birds fly, but gravity still has a downward pull.

Coming up against other ways of thinking helps to develop critical thinking. This is also important when we listen to news broadcasts or read newspapers – we have to think critically about what we hear and read, or we are the dupes of those who own the television stations and the press. Of course, critical literacy also involves thinking sharply about and resisting persuasive messages such as advertising.

Looking at alternatives and thinking critically does not only involve finding faults in an explanation, but can involve creativity: imagining alternative futures, role playing other possible outcomes, designing to fulfil people's needs, planning an event or a video report.

Experience and symbolic representation

An important issue which is often neglected is the relationship between our experiences and the way they are represented and communicated through words and other kinds of symbol. Some forms of symbolic representation are more abstract than others. For example, algebra is more abstract than numbers, theoretical explanations are more abstract than stories. On the other hand, some forms of representation are multisensory and more closely resemble experience in all its richness.

Younger children in particular find abstract representations difficult to grasp, and need real-life examples in order to make sense of them. However, it is still important to build the capacity to use abstract representations, which can help explain how things work in general, not just in particular situations. That is why the laws of science are often expressed, in the end, as formulae.

A 'common sense' way of dealing with pupils who struggle with abstract explanations is to devise endless practice filling in worksheets. Such pupils find themselves relegated to completing exercises which have no context or relevance. They remain stuck, and fail to make progress. Jim Cummins observed this happening to pupils who spoke another language at home. He recommends instead strengthening the visual, experiential support – challenging pupils to think about serious and important matters, but using more images and examples.

Product and audience

Why do so many young people switch off school learning? One reason may be that much of it is an alienated activity, like working in a factory: you do what you are told, without understanding why; you have no input as to what to make or how to do it; your product simply disappears and in exchange you receive a wage. In school, pupils are rarely engaged in deciding what or how to study, and instead of the satisfaction of the finished product or making a presentation to an audience, they simply hand over a product, e.g. a piece of writing, to the teacher and receive a mark or grade in exchange.

There are many ways in which learners can be engaged in decision-making about what and how to learn, obviously with the teacher's guidance, and many ways in which activity can lead to a satisfying product, a display or a presentation to an audience, whether this is other pupils or parents or another interested audience. The intrinsic satisfaction means less need to rely on extrinsic rewards and sanctions.

Some issues for discussion

- A) How does the concept of 'pedagogy' connect with the official curriculum?
- B) How do theories of constructivism relate to what you do already?
- C) How could interactions in your classroom become more 'dialogic'?
- D) Think about today's or yesterday's lessons. How many opportunities did learners have for critical thinking, or for creative thinking which opened up new possibilities and perspectives?
- E) Exchange some examples of difficulties with abstract thinking, and how they might be overcome.
- F) Are you missing opportunities to involve learners in decision making? How can you create a better sense of product or audience, as the conclusion to an activity?