# Creating Resources Using Skinner's Theory

Skinner's theory suggests that learning results from the consequences of the learner's behaviours. This simple idea underpins many interactive resources.

Skinner's behaviourist theory suggests that behaviour is shaped and maintained by its consequences. More specifically, a **stimulus** (feature of the environment) elicits a **behaviour** from the learner and the **consequences** that follow determine whether it is more or less likely to be repeated in future. In behaviourist terminology the consequence will either act as a **reinforcement** (which strengthens the behaviour) or a **punishment** (which weakens it).
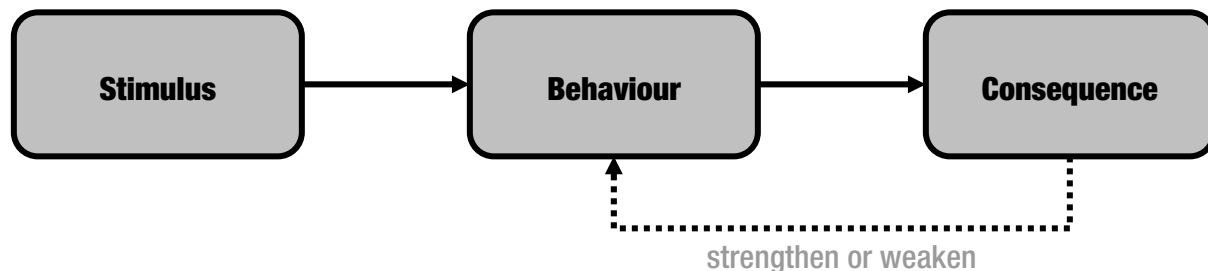
In the classroom, for example, the stimulus might be the teacher asking a question. The learner's answer is their behaviour and the teacher's response to their answer is the consequence. If the teacher says 'correct' or something similar, this acts as a reinforcer whereas if they signal that the answer is wrong this acts as a punishment. Through consistent reinforcement of appropriate responses a sequence of learning occurs.

In Skinner's view, complex behaviours are sequences of simple behaviours joined together. Consequently, the teaching of complex material involves breaking the learning down into a series of small steps, each of which can be learned in sequence before being 'assembled' into the desired complex behaviour.

Skinner's ideas draw attention to a number of teaching strategies that can inform the design of learning resources and are particularly appropriate to the development of interactive ILT materials:

• Complex material must be broken down into simple steps, and careful attention paid to the sequence of delivery.
• Each step must be learned in turn and the learner must not be allowed to progress until a particular step has been mastered.
• Consequently, each unit of learning must be tested and the learner given feedback that reinforces appropriate responses.
• Where inappropriate responses occur these should be discouraged and the learner guided towards correct behaviour.
• At the end of the learning sequence there should be the opportunity for the learner to assemble the steps into more complex learning and they should be tested on this and given appropriate feedback.

Because some learners will acquire the appropriate behaviours faster than others, a behaviourist learning resource should (in principle) allow learners to progress at their own pace.

The design of behaviourist learning materials depends a great deal on what is being taught and to whom. However, there are some general approaches to resource design that help a teacher to think clearly about the learning that is to occur.

One aid to resource design is a flowchart that goes through the material step by step and branches off where the response of the resource depends on the behaviour of the learner. For example:

```
                    Start

When providing additional material
it is necessary to anticipate the
problems that learners are likely to
                    have.

        Material to be learned  ◄········································
        for step 1 of the
        sequence

        Test on material just    Incorrect    Negative      ········►   Additional step 1
        presented               ──────────►   feedback                  material

                │ Correct
                ▼
        Positive
        feedback

                ┊
        There can be as many
        steps as are needed

        Test of the whole        Incorrect    Negative      ·····►   Ideally, if a problem is identified
        learning sequence       ──────────►   feedback               when the whole sequence of
                                                                      learning is tested, the resource
                │ Correct                                             should be capable of directing the
                ▼                                                     learner to those steps in the
        Positive                                                      learning that they failed to master,
        feedback                                                      rather than simply making them
                                                                      repeat the whole sequence from
                │                                                     the start.
                ▼
        Finish
```