More about trial-and-error learning in the classroom

Thorndike is mainly remembered for his studies on the effect of rewards on behaviour. He began his work on the process of learning with a series of experiments, which were designed to measure animal intelligence (Thorndike, 1898, 1911). His studies of trial-and-error learning led to a concern with the effects of behaviour on learning and the idea of a stimulus-response (S-R) chain, with responses acting as stimuli for further behaviour. He also identified other consistent relationships between the behaviours emitted by individuals when placed in problem situations and subsequent learning. His work resulted in his identification of a series of laws, each of which has implications for classroom instruction. Thorndike’s “laws” included the “law of effect”, the “law of exercise” and the “law of readiness”, the “law of prepotency” and the “law of analogy”.

The law of effect

According to the law of effect, you should give children problem-solving tasks that they can solve by trial-and-error, and reward success. The law of multiple responses suggests that you should also encourage children who cannot find a solution to “try another way”.

The law of exercise

Initially, Thorndike included the law of exercise in his theory. This asserted that learning would be strengthened by repeated practice. However, he later rejected this law after realising that simple repetition of a new skill does not ensure that learning occurs.

The law of readiness

The law of readiness requires that you make sure that children have the necessary skills and attitudes before introducing a new learning task. For example, being ready to learn to read may not involve physical development (e.g., hand-eye co-ordination, strength, manual dexterity). However, early reading instruction will be more successful if the child has prerequisite skills such as a reasonable vocabulary and can recognise and name some of the letters of the alphabet.
The law of prepotency of elements

Another law identified by Thorndike included the *law of prepotency of elements*. According to this law, if you want children to attend to particular aspects of a learning task, such as punctuation in a piece of prose, you should make the punctuation stand out in some way by underlining or using colour, shape or size to attract the children’s attention. We are most likely to attend to more striking or conspicuous aspects of a situation. Think about the fact that babies like to look at things that move, are colourful and make a sound.

The law of analogy

Finally, according to the *law of analogy*, you should draw children’s attention to similarities between new situations and others that are already familiar. For example, when teaching a new strategy for locating information on the Internet for a project, remind the children of the way they collected information for a previous task that involved using the library or an encyclopaedia. Your aim is to point out links between the new task and one that is already familiar.

Activities

1. Can you identify any learning situation where you can apply one of Thorndike’s laws?
2. Thorndike changed his mind about the “law of exercise”. Can you think of an example where simple “drill and practice” exercises do not promote learning?
3. Can you think of any examples where we use “prepotency of elements” to shape or condition children’s behaviour?

References

