

Exercise walk-through

8.2

Motor learning, feedback and retention

International Baccalaureate · IB Diploma · Sports, Exercise and Health Science · S

8.2 Motor learning, feedback and retention

Name: _____ Class: _____ Date: _____ **Total: 10 marks**

KEY WORDS knowledge of results • retention

Objective

Motor learning, feedback and retention. Supported SL concept preparation; original classroom practice, not an official IB paper or assessed learner work.

1 Key knowledge and worked examples

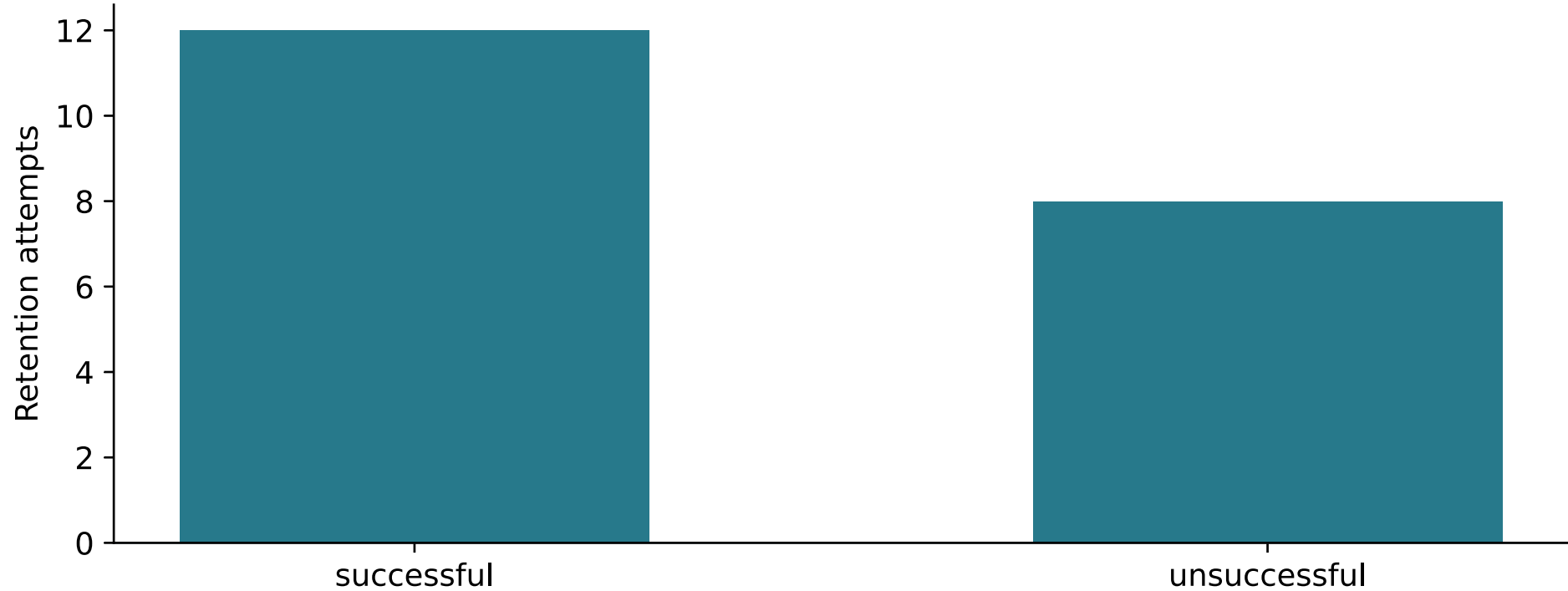
■ What would explain this observation?

- A learner performs well while a coach gives constant instructions, then struggles the next day. Immediate performance and retained learning are different outcomes.
- Start with a prediction. State the quantities or features you would compare, then decide what evidence could distinguish two explanations.

■ Build the model

- Motor learning is a relatively lasting change in movement capability from practice.
Knowledge of results concerns the outcome; knowledge of performance concerns movement quality.

- **retention** : Persistence of learning after a delay; knowledge of results: Feedback about the task outcome.



■ Choose evidence that can test it

- A retention test after a delay and without the same assistance can provide evidence of learning. Practice conditions, prior experience and task difficulty need control before comparing feedback methods.
- Use a low-risk target task, equal practice time, random or balanced assignment, and a delayed retention test. Record outcome accuracy separately from movement quality. Seek consent and avoid labels about a participant ability or personality.

■ Work from known quantities

- State the known values and their units. Choose the relation because its assumptions

fit this case, then rearrange before substitution.

- Known: 12 of 20 throws hit a target during retention. Accuracy = successful attempts/total attempts $\times 100 = 12/20 \times 100 = 60\%$. Another group at 70% is not automatically superior without sample variability and comparable starting performance.

Example:

15 of 25 retention attempts succeed. Find success percentage. Use the same sequence: known quantities $\rightarrow$ model $\rightarrow$ relation $\rightarrow$ substitution $\rightarrow$ unit and interpretation.

■ Check the conclusion and its limits

- More feedback is not always better for independent performance. A short-term im-

provement alone does not demonstrate a lasting learning change.

- Return to the original observation. Explain what the result supports, which conditions it assumes, and one way to test a competing explanation.

Warn:

High performance during guided practice always proves lasting motor learning. This claim is false: More feedback is not always better for independent performance. A short-term improvement alone does not demonstrate a lasting learning change.

Key:

Motor learning, feedback and retention: A retention test after a delay and without the same assistance can provide evidence of learning. Practice conditions, prior experience

and task difficulty need control before comparing feedback methods.

Exercises 2.1·2.3

2.1 Which measure best tests lasting learning? Choose one answer.

- **A** Performance only while the coach supplies every correction
- **B** A delayed unassisted retention test
- **C** The participant favourite colour

[1]

2.2 15 of 25 retention attempts succeed. Find success percentage. Show the relation, substitution and units.

[2]

2.3 Decide whether this claim is true and justify: High performance during guided practice always proves lasting motor learning.

[2]

Exercises 2.1·2.3

2.1 Which measure best tests lasting learning? Choose one answer.

- **A** Performance only while the coach supplies every correction
- **B** A delayed unassisted retention test
- **C** The participant favourite colour

[1]

2.1 B A retention test after a delay and without the same assistance can provide evidence of learning. Practice conditions, prior experience and task difficulty need control before comparing feedback methods.

2.2 15 of 25 retention attempts succeed. Find success percentage. Show the relation, substitution and units.

[2]

2.2 Success percentage= $15/25 \times 100 = 60\%$.

2.3 Decide whether this claim is true and justify: High performance during guided practice always proves lasting motor learning.

[2]

2.3 False. More feedback is not always better for independent performance. A short-term improvement alone does not demonstrate a lasting learning change.

Exercises 2.4·3.1

2.4 Persistence of learning after a delay: write the technical term.

[1]

3 Exam-style questions

3.1 Fictional practice accuracy is 90%; delayed retention without feedback is 60%. Interpret the change and design a test of durable learning.

[4]

Exercises 2.4·3.1

2.4 Persistence of learning after a delay: write the technical term. [1]

3 Exam-style questions

2.4 retention. retention means Persistence of learning after a delay.

3.1 Fictional practice accuracy is 90%; delayed retention without feedback is 60%. Interpret the change and design a test of durable learning. [4]

3.1 Observed performance fell 30 percentage points. Compare matched baselines, delayed retention without feedback and transfer trials, with repeats. Practice performance alone does not prove durable learning or its cause.