

# How People Learn

**FTPP – 2 October, 2009**

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**THE UNIVERSITY  
OF AUCKLAND**

**FACULTY OF EDUCATION**

Te Kura Akoranga o Tāmaki Makaurau  
Incorporating the Auckland College of Education

# Critical Instructional Ideas

- Adaptive motivational orientation
- Meaningful processing
- Strategic use of mental energy/effort

# Adaptive Motivational Orientation

## ***Academic Beliefs & Orientations***

- Ability as changeable
- Past performance due to controllable causes
- Goals relate to increasing skills and competence



## ***Future Outlook***

- Success expectations
- Value of feedback and mistakes
- Valued outcomes

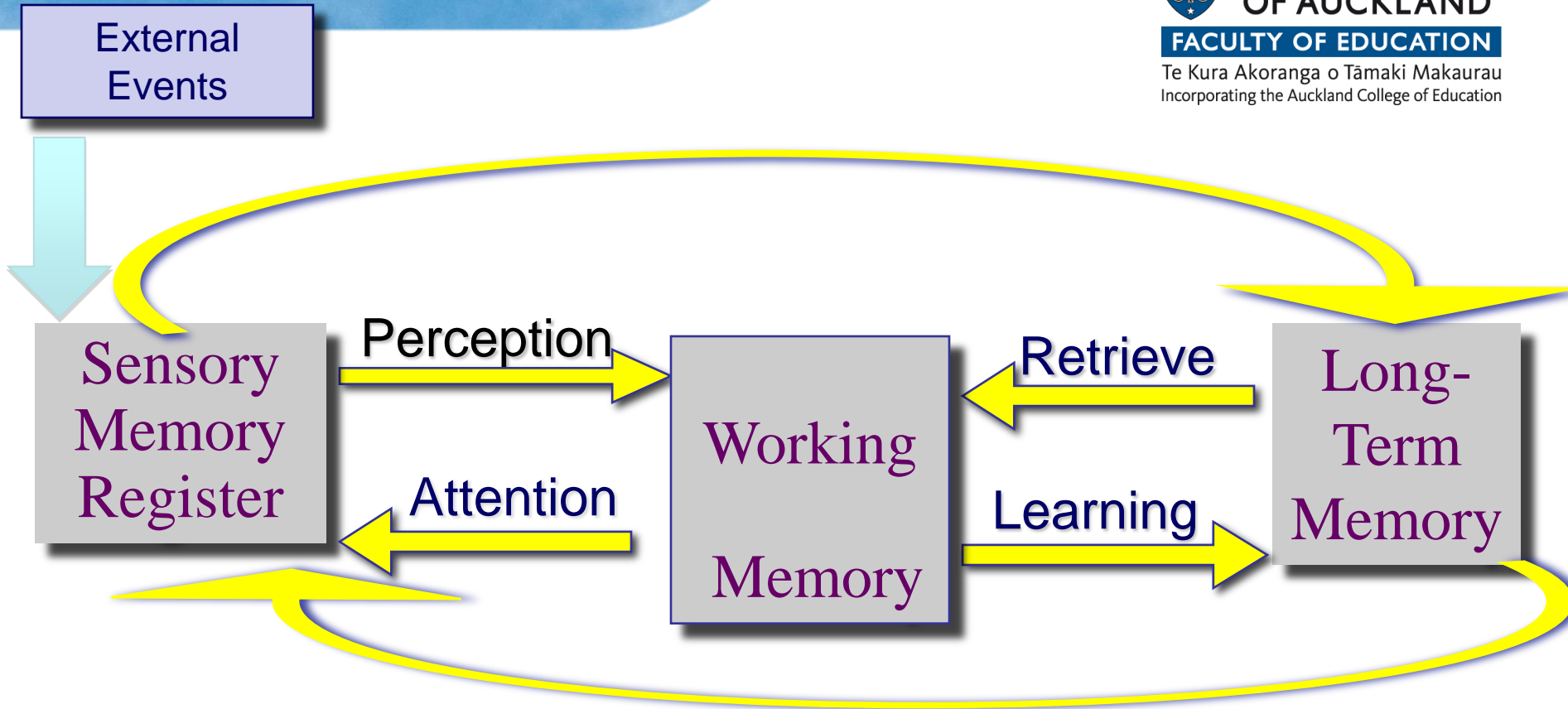


## ***Student Performance***

High effort, persistence and engagement

# Implications

- Help students to develop a history of effortful success
- Give students explicit feedback and feed forward information
- Encourage self-referenced learning and self-directed learning



# Meaningful Processing



A newspaper is better than a magazine. A sea shore is a better place than the street. At first it is better to run than to walk. You may have to try several times. It takes some skill but it is easy to learn. Even young children can enjoy it. Once successful, complications are minimal. Birds seldom get too close. Rain, however, soaks in very fast. Too many people doing the same things can also cause problems. One needs lots of room. If there are no complications it can be very peaceful. A rock will serve as an anchor. If things break loose from it, however, you will not get a second chance.

PARIS  
IN THE  
THE SPRING

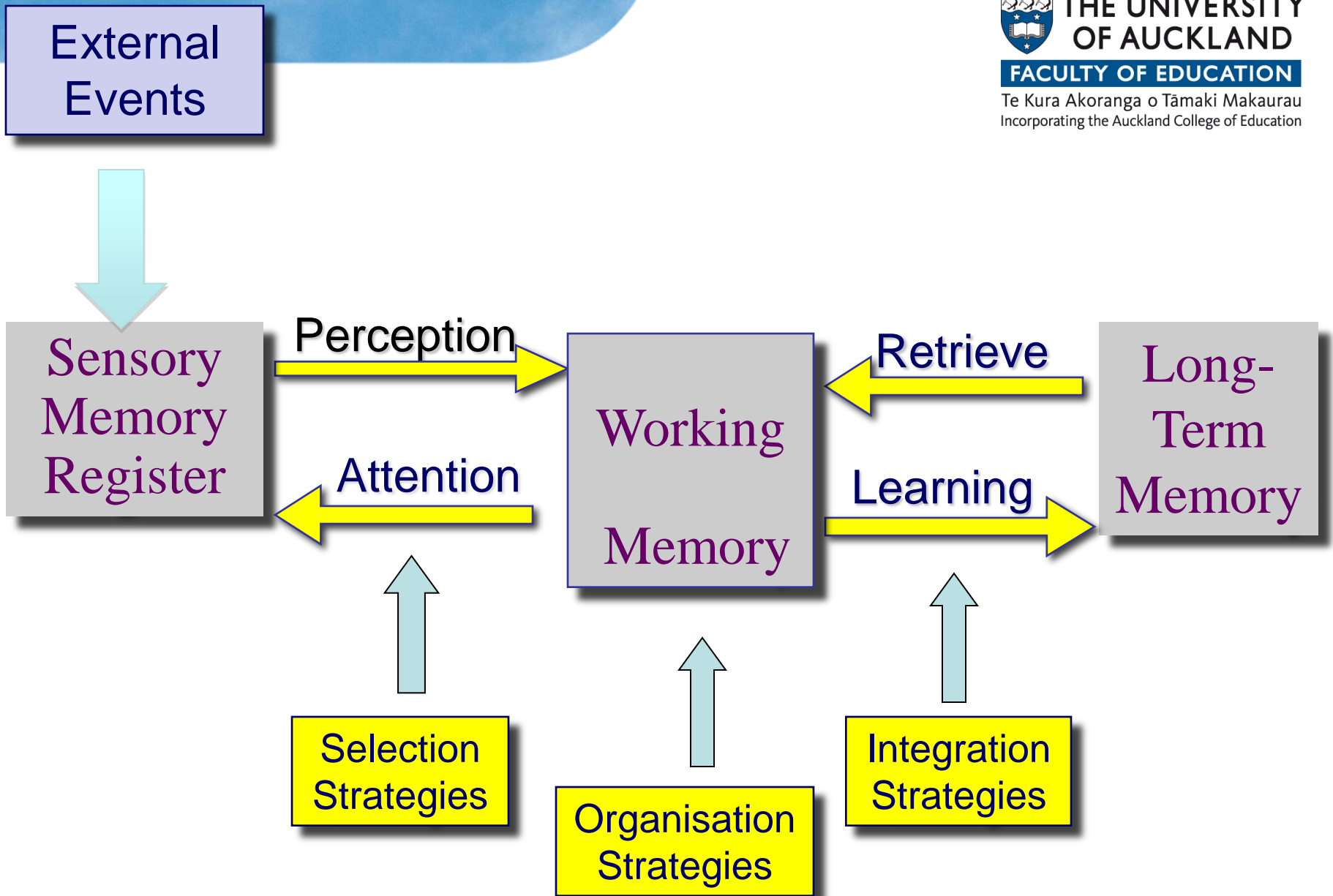
ONCE  
IN A  
A LIFETIME

BIRD  
IN THE  
THE HAND

# Enhancing Meaningful Learning

- Importance of prior knowledge for
  - *Selecting* what information to process
  - Help in *organising* new information
  - Facilitate *integrating* of new information



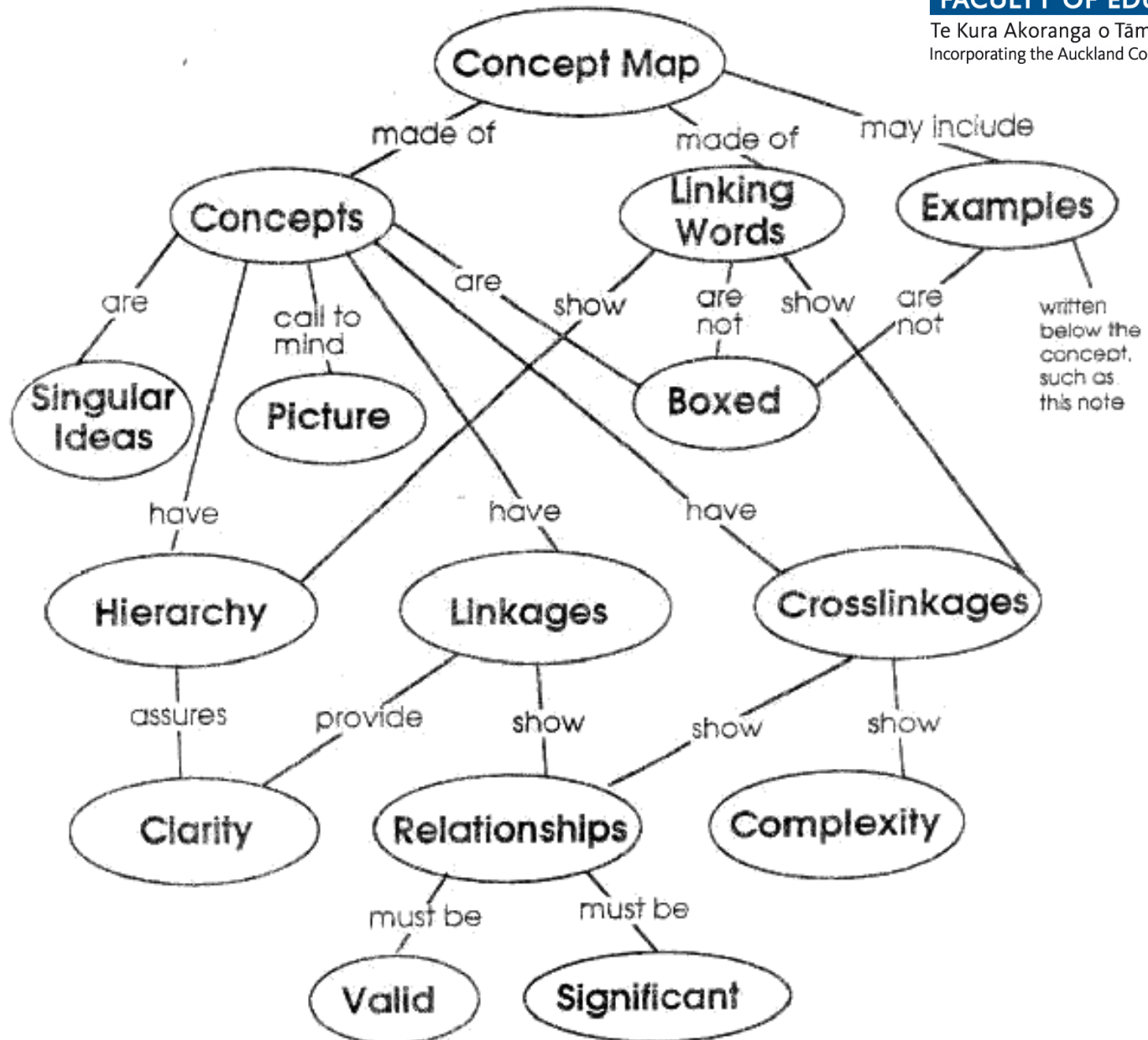


## ***Selection Strategies***

- Purpose of selection techniques or strategies is to activate relevant prior knowledge (schema) by identifying what is the most important information.
- Possible strategies/techniques:
  - Review objectives or outline
  - Review summary at end of chapter
  - Read assigned reading before class
  - Be alert to teacher’s “signal words”

# *Organisational Strategies*

- Purpose of organisational strategies/techniques is to create meaningful units of information and efficiently use our limited mental energy
- Possible organisational techniques/strategies:
  - Create outlines
  - Create concept maps and diagrams
  - Identify similarities/differences between aspects of the target information/skills, e.g., chunking
  - Mnemonics



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## ***Integration strategies***

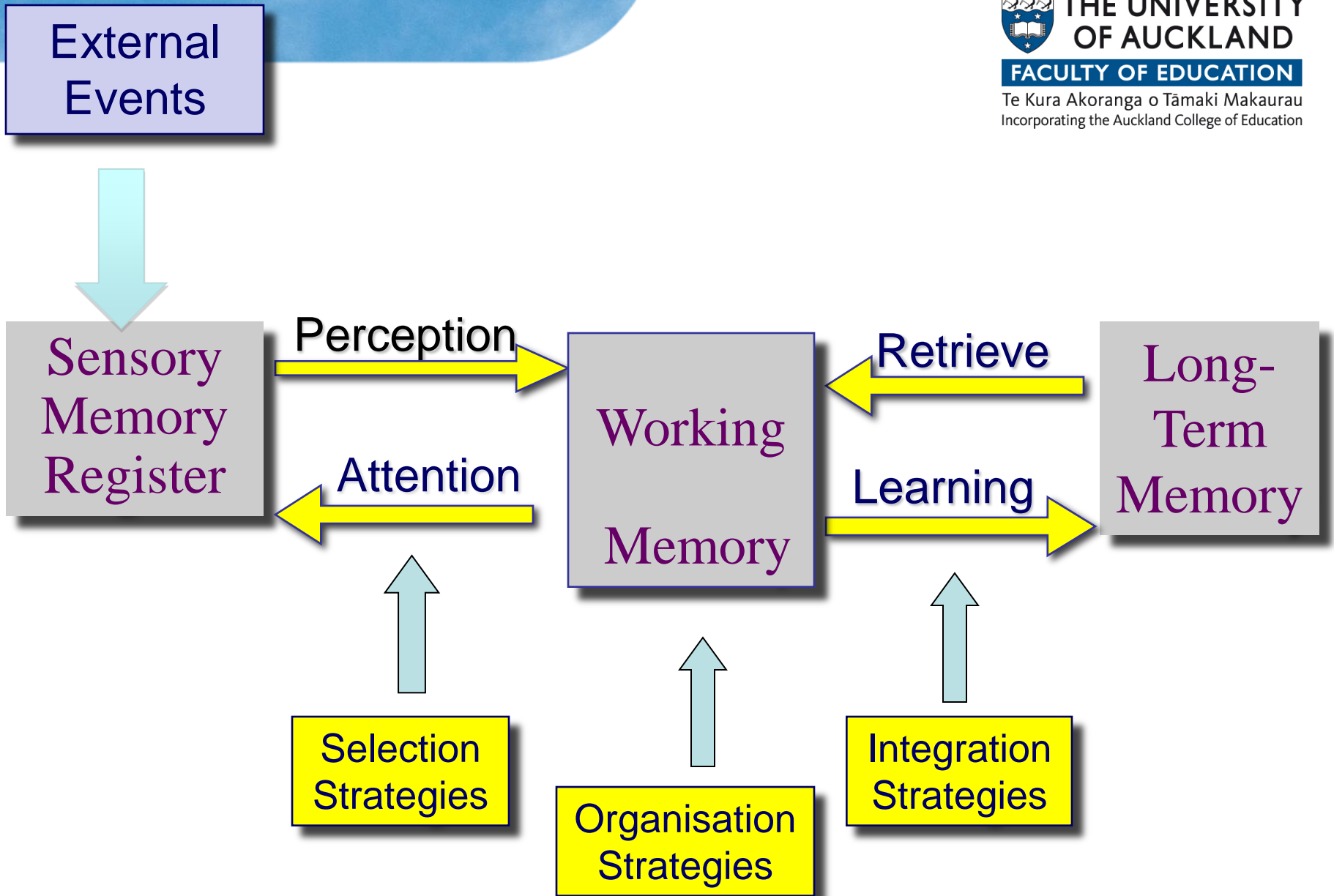
- Purpose of integration strategies/techniques is to make the information meaningful and memorable by creating links with prior knowledge and/or by modifying existing knowledge.
- Possible instructional strategies/techniques:
  - Use imagery
  - Actively question new information
  - Think about its implications
  - Generate own examples of concepts





Dr. Hamilton,  
may I be  
excused. My  
brain is full!

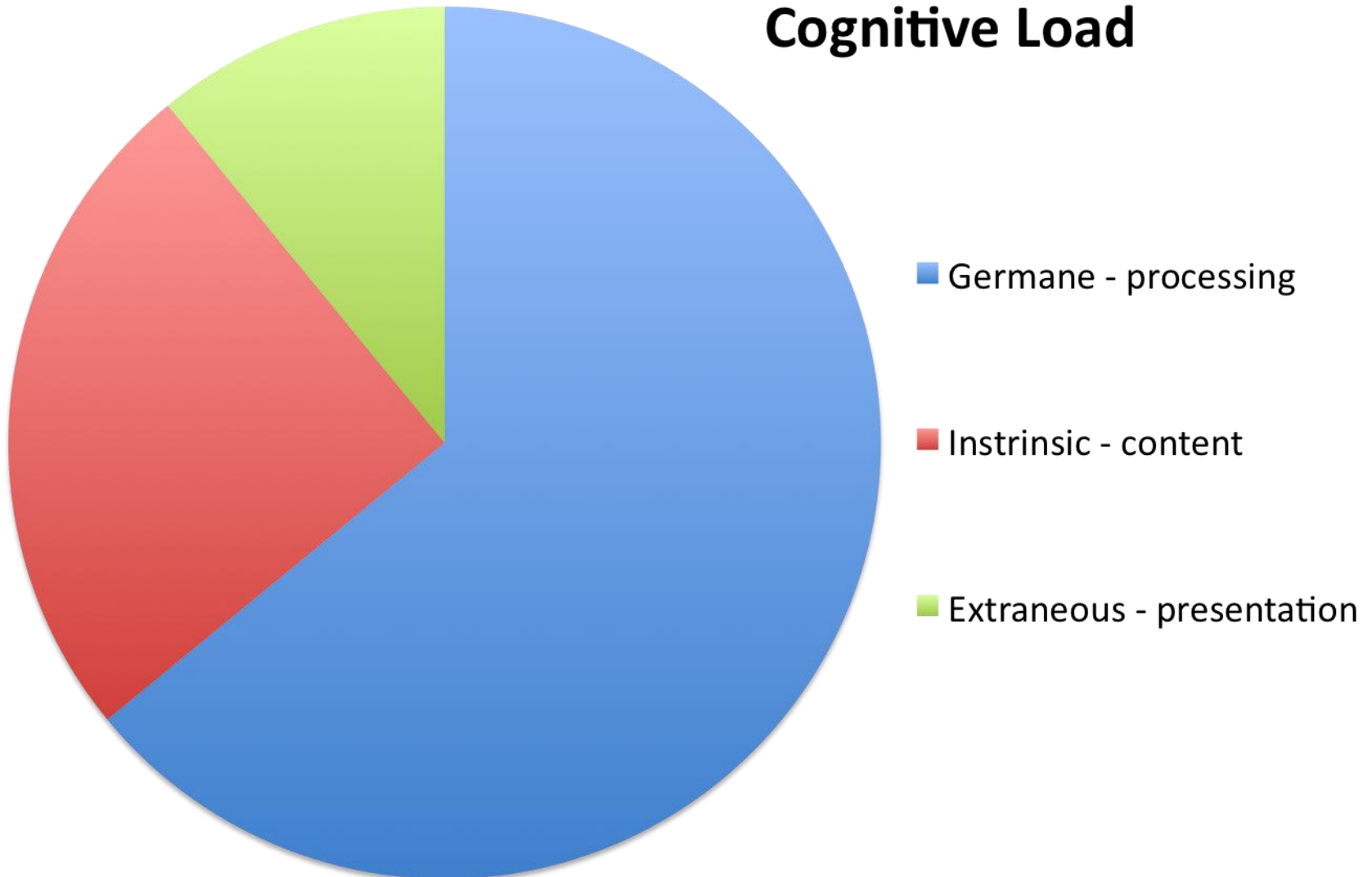
**Strategic use of mental energy**



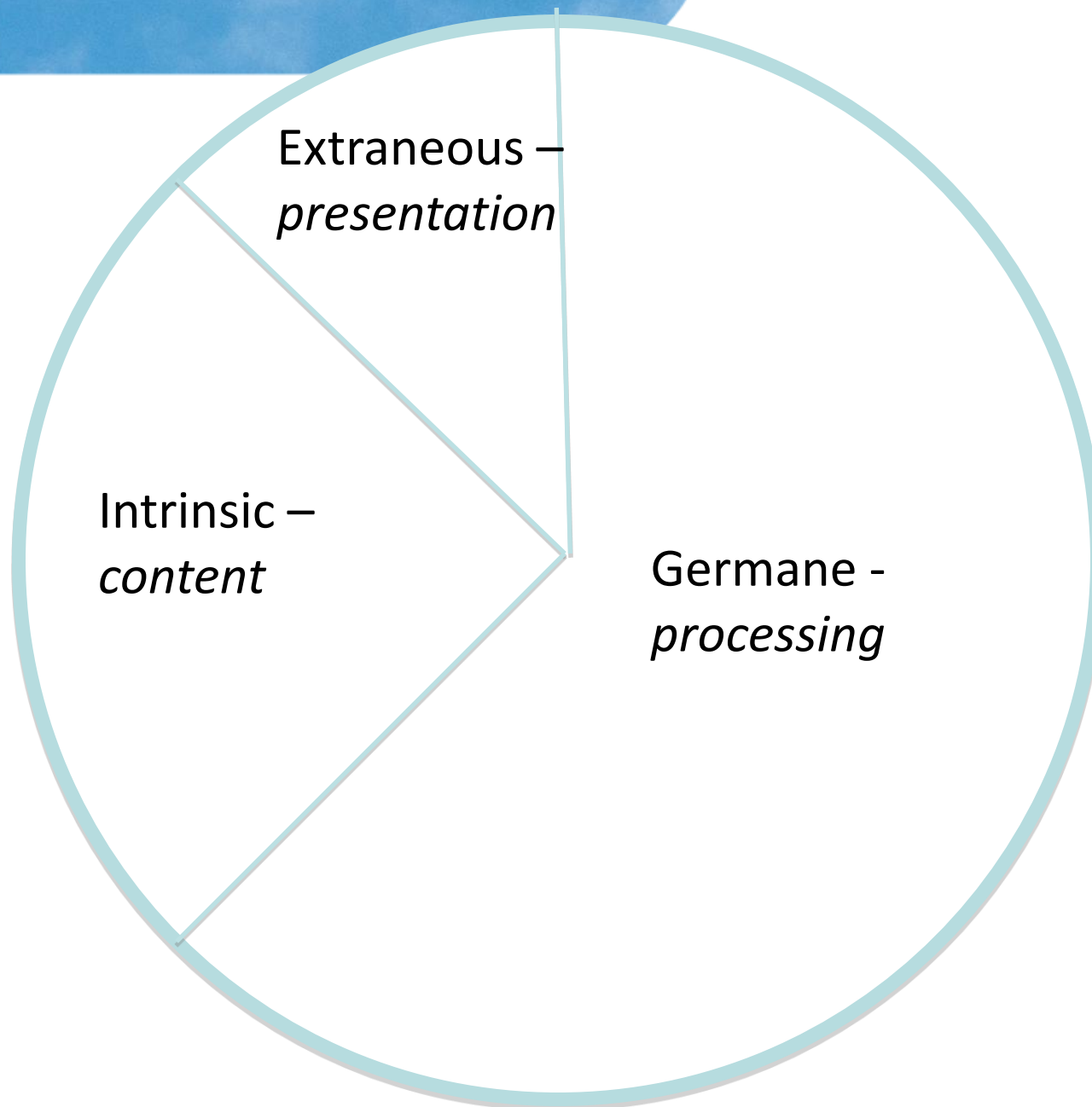
# Cognitive Load

- *Intrinsic cognitive load*: nature of the **content** to be learned and the level of expertise of the learner.
  - Very complex and abstract – high intrinsic load
- *Germane cognitive load*: nature of **processing** employed in learning and associated with processes that are directly relevant to learning.
  - Focused on meaningful learning and processing – high germane load
- *Extraneous cognitive load*: nature of **presentation** of information to be learned.
  - Presentation of diverse types of information (images, written words, actual objects, auditory input) and not well integrated – high extrinsic load

## Cognitive Load



# Cognitive Load



# Implications

- Maximise the use and application of student prior knowledge/schema when teaching
- Be aware of the impact of multiple presentation styles on students' cognitive load
- Balance “making it meaningful” with “minimising extraneous load”

# Useful References

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- Low, R., Jin, P., & Sweller, J. (2008). How research in educational psychology has contributed to instructional procedures: The case for cognitive load theory. Presented at the *1<sup>st</sup> Educational Psychology Forum*. University of Auckland, September.