

# SPED102 Exam Notes

---

## Week One

- Memory is inherently flawed.
- We look for patterns and causes (even if they're not there).
- We inherently have a poor understanding of probability.

### Questionable Practices in Education

- *Facilitated communication*: claimed to allow individuals with apparently profound disabilities to communicate through assisted typing.
- *Learning styles*: auditory, visual, kinaesthetic.
- *"Digital natives"*: younger people who have deep integration with internet technologies and develop fundamentally different cognitive skills (such as multitasking) and styles.
- *Perceptual-motor programs*: claim that specific physical activities can improve a wide range of learning and related skills in children, e.g. Brain Gym.

### Neuromyths In Education

- False myths about neuroscience e.g. that our brains shut down when we sleep.
- Knowledge of intelligence doesn't inoculate us from believing strange things.
- *Example*: Dekker et al. (2012) looked at the prevalence and predictors of misconceptions among teachers. On average, teachers believed 49% of the Neuromyths despite general knowledge about the brain.

## Week Two

- Strange beliefs are beliefs that if true would overturn current scientific world views e.g. mediumship, telepathy, precognition, psychic healing, homeopathy (treating illness with highly diluted substances), auras, graphology and rumpology.
- People are susceptible to believing strange things regardless of gender, socioeconomic status, or education.
- Susceptibility traits: fantasy proneness, hypnotic-suggestibility, and dissociation.

### The Role of Cognition

- Our cognitive abilities (thinking, perception, language, etc.) consistently let us down → our cognition is vulnerable.
- We often see what we haven't seen, hear what we haven't heard and even recall events that never took place.
- Cognitive biases are consistent misjudgements that humans make all the time.

### Pareidolia

- The psychological phenomena whereby we **see meaning in random stimuli**.
- All human beings feel the need to find meaning but believers will often find paranormal context in random stimuli.

- If you are looking for the evidence based on a certain belief, you will almost certainly find it.
- Evolutionary advantage of being sensitive to patterns → false positives present less risk than false negatives.

### Preconceptions

- Perception is influenced by context, environment and culture.
- We see or hear what we expect (or are primed) to see or hear.
- E.g. Stairway to Heaven played backwards, magician bending a spoon.

### The Element of Control

- *Locus of control*: the extent to which individuals believe they can control events affecting them.
- False belief that we have control over random events.

### Poor Understanding of Probability

- *Misunderstanding relative and absolute risk*: while relative risk increase is large e.g. 500%, the absolute risk increase is very small (1.5/10 million).
- Believers do appear to be more likely to attribute random events as paranormal (Hines 2003).
- Poor understanding of probabilities may contribute to belief in telepathy, precognition and psychic phenomena.

### The Concept of Randomness

- Humans find the concept of randomness very hard to understand as it is lumpier than we think.
- We find it difficult to recognise random patterns of coin tosses → runs occur randomly and we don't recognise them as random (Mlodinow 2009).
- Randomness doesn't look random.

### Coincidence – chance or evidence of the paranormal?

- The law of large numbers → unlikely events are inevitable when dealing with large numbers.
- E.g. most people dream 4-6 times a night for 10 minutes meaning there is a large change of you having a prophetic dream every now and then throughout your life.
- Confirmation bias: we remember the hits but forget the misses.

## **Week Three**

### Anchoring Effects

- *The tendency of arbitrary baseline values to affect decisions*
- E.g. offered to charge \$2 or pay students \$2 to attend a poetry recital, would you be willing to go for free?

### Framing Effects

- *Value attached to an item is influenced by irrelevant alternative choices.*

- We usually don't have an inherent idea of value – it's framed by comparisons. These can be and are manipulated to affect our choices.

#### How Does Memory Work?

- Memory is vulnerable to misleading information, social influence and individual differences.
- Just because you're confident about a memory doesn't mean it's true.
- Rather than remembering the event, you're reconstructing the past.