



Prifysgol Cymru
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Essential Skills: Research Seminar

Trawsnewid Addysg, Trawsnewid Bywydau
Transforming Education, Transforming Lives

www.uwtsd.ac.uk

Learning Outcomes

In this session we will aim to:

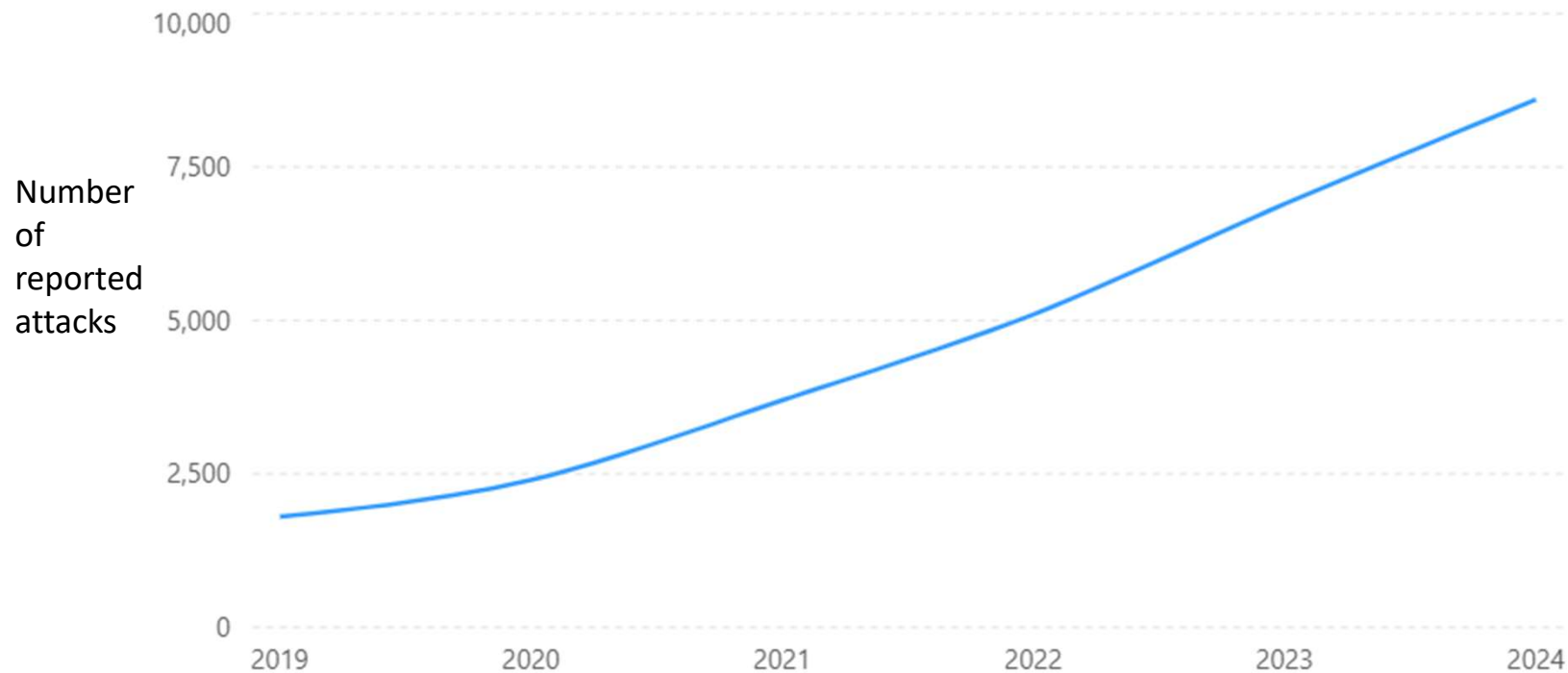
- Distinguish between descriptive and critical analysis.
- Use data and evidence to support arguments.
- Identify limitations, assumptions, and alternative interpretations of data.
- Construct balanced, evidence-based evaluations.
- Apply critical analysis techniques to discipline-specific examples.



This session will be relevant to your future assessments in your modules as well as in your future workplace tasks when critical thinking is required.

What Does the Data Tell You?

A graph to show the number of cyber attacks in the UK



What conclusions can you draw from this graph?

What Does the Data Tell You?

Descriptive statements

- Cyber attacks have increased.
- There were more incidents in 2024 than in 2019.

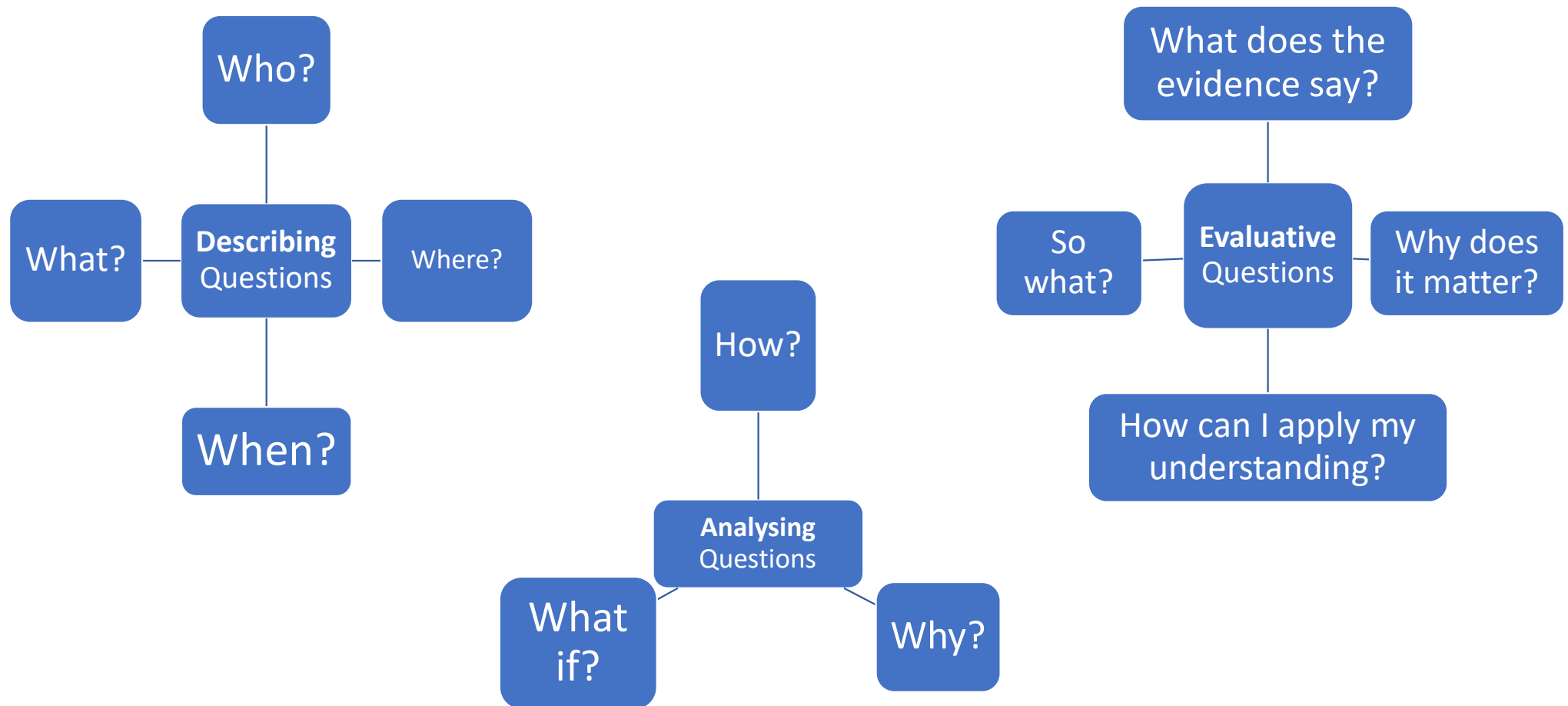
Analytical statements

- Remote working may have increased organisational vulnerability.
- The growth of cloud computing may have created more attack opportunities.

Critical statements

- The data lacks information about attack severity, organisational size, and sector which limits the reliability of broad conclusions.

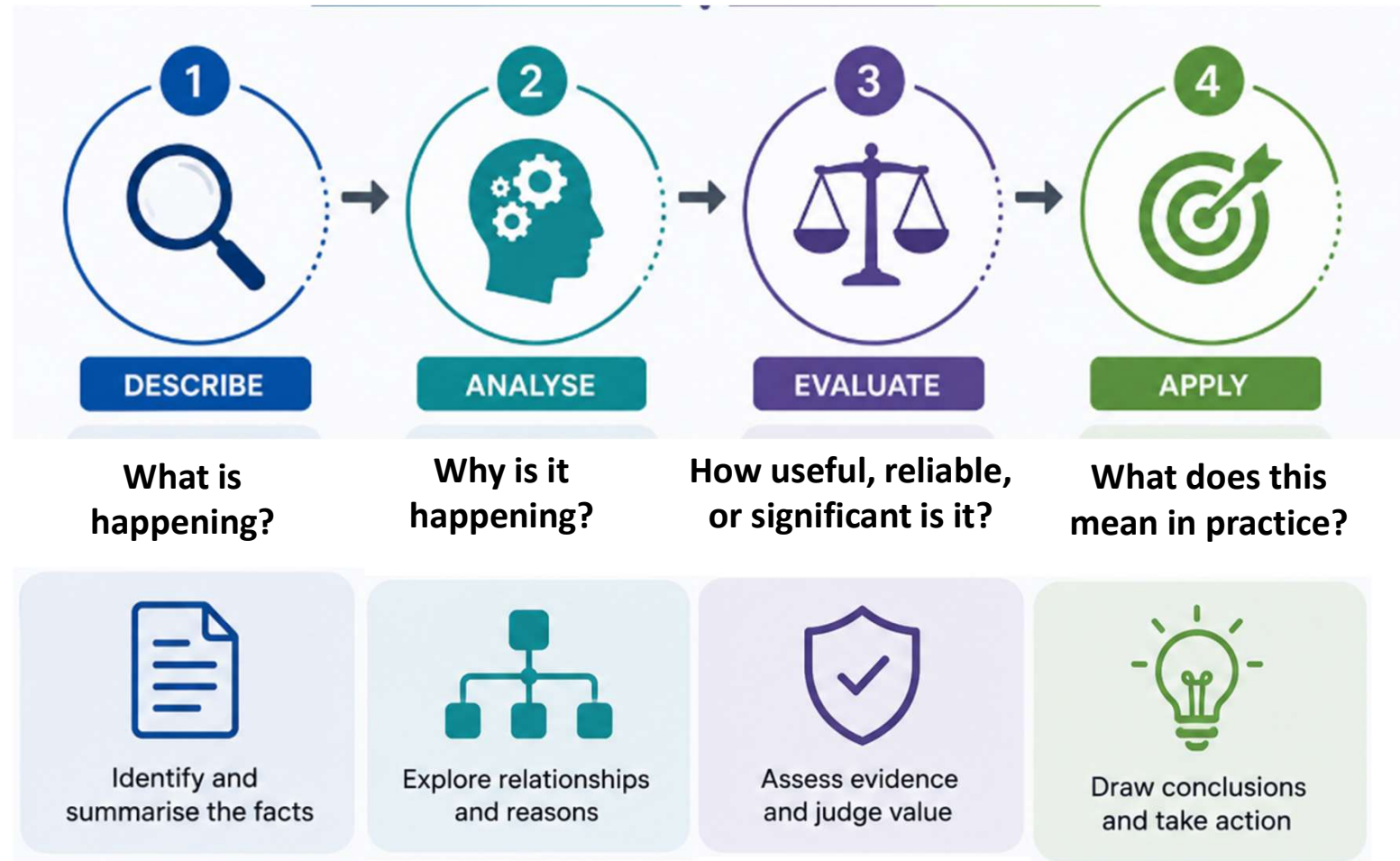
Asking Critical Questions



Critical Analysis Framework

To advance your academic writing, critical analysis is an important skills to develop.

This involves four key steps:



What is Critical Thinking?

Being critical means being thoughtful and analytical about what you hear, see, read and experience.

Avoid being biased

Consider a range of options

Consider a range of opinions

Objectively consider evidence

Useful Sentence Starters

"This theory is useful because..."

"However, a limitation of this data is..."

"This suggests that the theory may be more suitable when..."

"In contrast, other researchers argue that..."

"Overall, this indicates that..."

Using Data Critically

An Example Data Set

Year	Mental Health Referrals
2020	100,000
2021	135,000
2022	170,000
2023	190,000

Stage 1 – Description

What does the data show?

Stage 2 – Analysis

Why might referrals have increased?

Stage 3 – Evaluation

What limitations exist?

Stage 4 – Application

What decisions could organisations make?

Discuss in pairs.

Turning Description into Critical Analysis

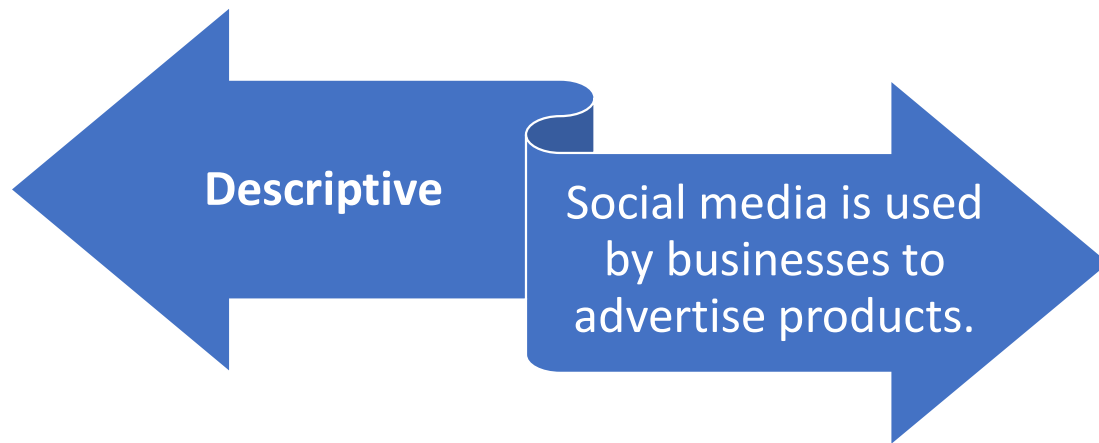
Descriptive Statement

Many companies use cloud storage to store data.

Critical Statement

Many companies use cloud storage because it is flexible and cost-effective. However, storing data online can create security risks if systems are not properly protected.

Turning Description into Critical Analysis



Critical

Social media allows businesses to reach large audiences quickly and cheaply. However, negative customer comments can spread rapidly and damage a company's reputation.

Data Challenge – Turning Description into Critical Analysis

Working independently
or in pairs, complete a
data challenge.

Select the challenge that
matches your area of
study.

Find the challenges in
Essential Skills Moodle
Week 5.

Data Challenge

Select the data challenge that fits your area of study - Health or Computing or Business.



Computing Data Challenge DOCX



Health and Social Care Data Challenge DOCX



Business Data Challenge DOCX

Share your points and conclusions

Data Challenge

Select the data challenge that fits your area of study - Health or Computing or Business.



Computing Data Challenge DOCX



Health and Social Care Data Challenge DOCX



Business Data Challenge DOCX

- Discuss your responses with your lecturer.
- Reflect - Which questions and tasks were challenging?
Which questions were easy to respond to?

Your current assessments

Spend the remaining time in the session planning how you will develop critical points in your current assessments.

Use the Planning My Critical Analysis Activity on Moodle to help you develop your current assessments.



Personal Progress Padlet

There are **no formal assessments** within 'Essential Skills' classes but you are encouraged to keep your Personal Progress Padlet.

Note down in your Personal Progress Padlet:

- What have you learnt today?
- How will you use this new skill?

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