



ES2660 COMMUNICATING IN THE INFORMATION AGE

SMART TALKING STUDENTS ENABLING IDEAS TO TAKE FLIGHT

T15: MACRO AND MICRO QUESTIONS: -

“HOUSTON, WE HAVE A PROBLEM”

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TO DO, TODAY

- Ask live questions that are truth-seeking, well-informed and probing
- Ask macro questions – to get the big picture
- Ask micro questions – to get the details
- Understand how asking questions is a key to progressive learning
- Form a “live” question for your Oxford Essay

DEAD QUESTIONS VS. LIVE QUESTIONS



Dead questions are:

- Self-serving
- Ill-informed
- Superficial

e.g. “Is Newton’s Law of Universal Gravity tested?”

Live questions are:

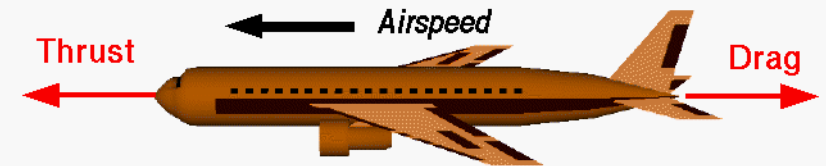
- Truth seeking
- Well-informed
- Probing

e.g. “How was Newton’s Law of Universal Gravity circumvented in a flying machine?”



Newton’s First Law Applied to Airplanes

Glenn
Research
Center



“Every object persists in its state of rest or uniform motion in a straight line unless it is compelled to change that state by forces impressed on it.”

When flying at a constant altitude:

If Thrust and Drag are equal, aircraft holds constant airspeed.

If Thrust is increased:

Aircraft accelerates – airspeed increases.

Drag depends on airspeed – Drag increases.

When Drag is again equal to Thrust:

Aircraft no longer accelerates but holds a new, higher, constant airspeed.

WHAT'S THE UNDERLYING LIVE QUESTION?



CHARLES BABBAGE'S COUN...
pinterest.com



... HP 260-a104na Desktop PC & ...
currys.ie



ASKING LIVE QUESTIONS!



- Live questions seek the truth, are well informed and are probing.
- Live questions may be categorized into three types: factual, preference or opinion only and judgment or analytical (Paul and Elder, 2006).

Which question types are asked in this video clip? There are 6 questions.

- Asking “live” questions to keep Apollo 13 astronauts alive:
- <https://www.youtube.com/watch?v=C3JIAO9z0tA>



Houston, We Have a Problem - Apollo 13 (4/11) Movie CLIP (1995) HD

APOLLO 13 – LIFE AND DEATH QUESTIONS



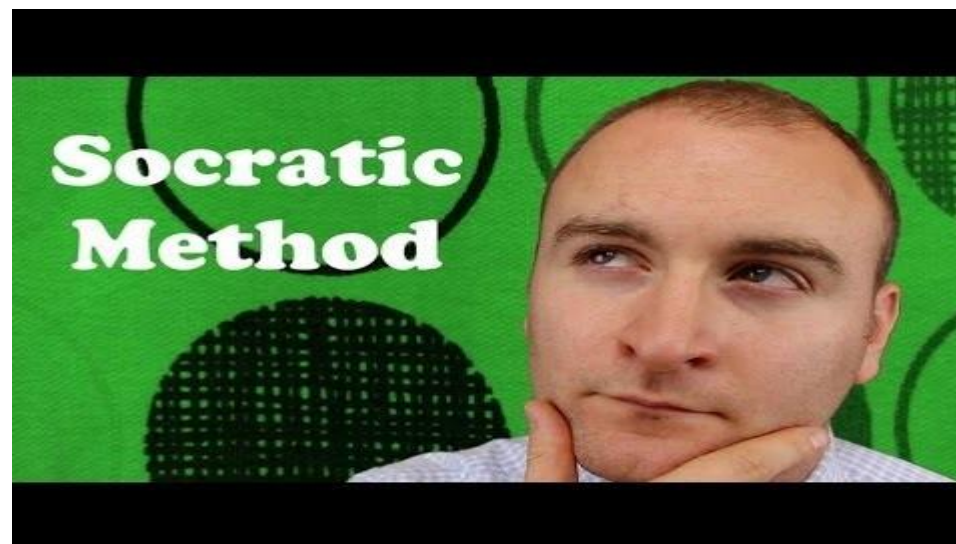
- What did you do?
- Say that again please?
- What's your data telling you?
- What's going on here? Let me get back to you?
- E-Comm is this an instrumentation problem or are we looking at real power loss here?

SOCRATIC DIALOGUE -NOW

- On the art of asking the right questions: “many of the best managers I’ve seen have an uncanny ability to engage in Socratic dialogue that helps people reach their own conclusions about what can be done to improve a plan or project, which of course leads to much more ownership and learning.” *The Art of Asking Questions* , Ron Ashkenas in the Harvard Business Review blog 1:39 PM August 30, 2011

SOCRATIC QUESTIONS

http://www.youtube.com/watch?v=_CPLu3qCbSU



What are the features of the Socratic Dialogue or Method?

SOCRATIC QUESTIONS IN ACTION

- How do the professor's questions help the student grasp the points of law?
- Did these questions work? If not, why not?
- Paper Chase <https://www.youtube.com/watch?v=XL0-CFyJDHo>
- https://www.youtube.com/watch?v=_983plQ_0sw
- (Hawkins and McGee – points of law)



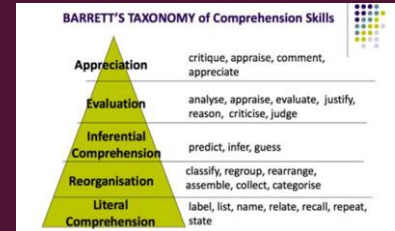
ACADEMIC CONVERSATIONS- INTELLECTUAL CURIOSITY



- How you ask questions, can show what kind of critical thinker you are, e.g. do you show a disposition to:

Clarity	Can you elaborate on your point about X?
Precision	Can you give us some details about how X works?
Accuracy	Have these findings been verified in some way?
Relevance	Could you tell us how this point X fits into the overall argument?
Deep thinking	Is this issue simple or complex? Does the answer cross domains of knowledge, e.g. science and ethics?
Broad mindedness	I have looked at the question from a moral point of view, but what about from an economic point of view?

BARRETT'S TAXONOMY AND YOUR LIVE QUESTION



Level 1 – What is the human problem in particular that interests you? Why are you interested in this topic? What is the IT solution you think is the most interesting or controversial?

Level 2- What are some uses of the algorithm? What are some controversies/what is the main controversy? Is the main impact socio-economic or political or in some other sphere?

Level 3 – What is the main impact/problem/concern you think should be addressed or you want to raise awareness on?

Level 4 – What is your analysis of the situation/context/controversy/problem/state of the art or technology/status quo?

Level 5 – What do you think will/should happen next? What if...? What then...?

MACRO QUESTIONS HELP YOU TO TRACK THE BIGGER PICTURE:



Authorial intent	<ul style="list-style-type: none">• Why are you interested in X?• What's the purpose of this essay?
Information source	<ul style="list-style-type: none">• Where's this from?• What convinced you it is credible?
Inferential reasonableness	<ul style="list-style-type: none">• How did you reach that conclusion?• Can you explain your line of reasoning?
Concepts	<ul style="list-style-type: none">• Could you justify that hypothesis? Or idea?
Argument	<ul style="list-style-type: none">• What's the implication?• What would happen if we were to follow that line of thinking? Cf – how Apollo 13 mission controller thought through how to get the astronauts safely back into Earth
Frame of reference	<ul style="list-style-type: none">• Whose point of view are you inclined to?• What would conservative/liberals think?
Questions	<ul style="list-style-type: none">• To what extent have you been able to take apart a complex question?• How does your conclusion address your original research question?

OXFORD ESSAY – FORMING YOUR OWN QUESTION

- To show critical thinking – know how to ask questions
- To show intellectual curiosity – ask questions
- To be innovative – question the status quo
- To expand knowledge – ask questions – clarifying, elaborating, probing, challenging, provoking
- To solve human problems with computer science – ask questions about... and here is where your essay or concept paper might fit in

KEY LEARNING POINTS (I)

- Questions are central to critical thinking.
- Be brave about asking questions that will promote or display good thinking skills.
- Ask “live questions” – questions that are truth seeking, well-informed and probing as these build up knowledge and understanding.

KEY LEARNING POINTS (2)

- Truth seeking questions focus on clarity, precision, accuracy. Being well-informed entails being broad minded and to probe is to seek deeper thought, to make sure that answers to questions are comprehensive enough.
- How you ask questions shows your critical thinking dispositions.
- Develop a system for asking questions of texts or authors of texts.
- Live questions – challenge status quo=>change and innovation/originality

KEY LEARNING POINTS 3

- Ennis says a critical thinker should ask thought provoking questions – can you remember any such questions from the panel discussion?
- Can you think of at least one provoking question to ask in your essay?

Q AND A

- Questions, please?
- Thank you.
- Next – Oxford Tutorial preparation

HOMEWORK/OXFORD TUTORIAL



- To read more on asking good questions, please read: Chapter 6 “Asking questions that lead to good thinking”, pp 117-135 in Critical Thinking 2e: Tools for taking charge of your learning and your life. Richard Paul and Linda Elder. Pearson, Upper Saddle River: New Jersey. 2006.
- To prepare for the Oxford Tutorial assignment, please watch Richard Dawkins talking about how he learned to think after going through the Tutorial system (3 mins)
<http://youtu.be/r8Th4WtKpDY>

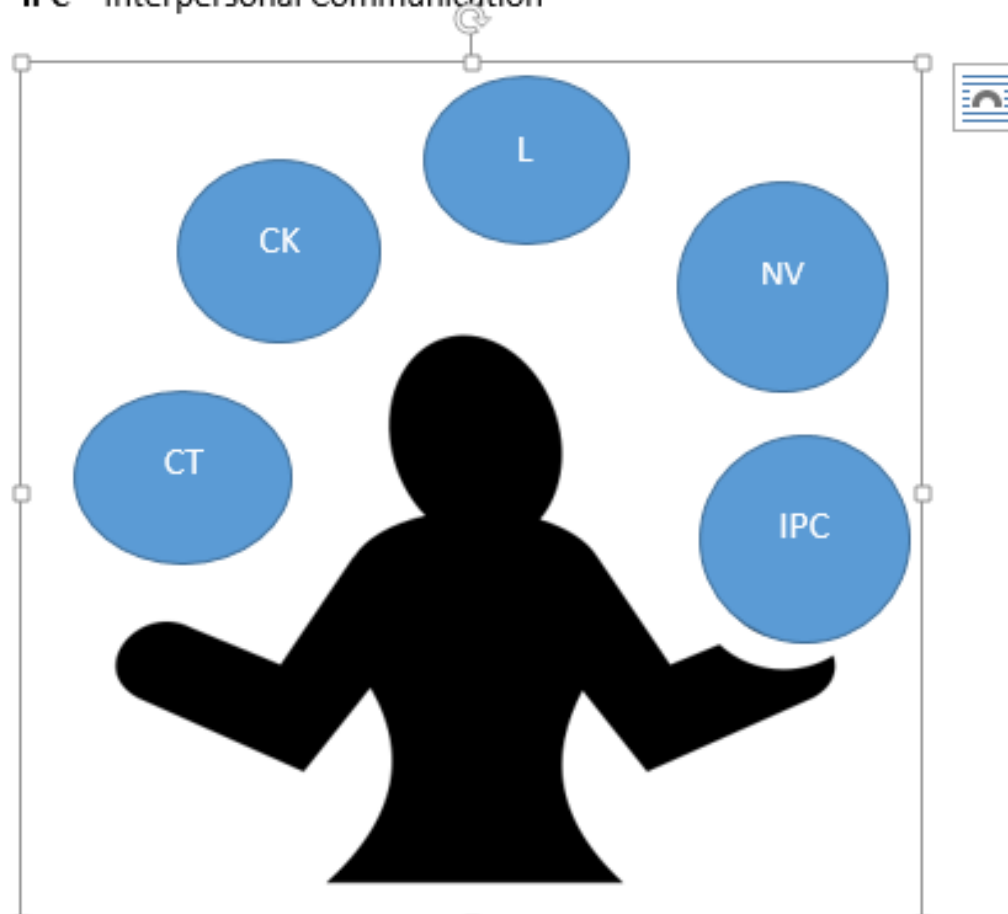
OXFORD TUTORIAL -RECAP



- Richard Dawkins on the Oxford Tutorial was ‘the making of me’ – it’s where he learned to think about his own ideas.
<https://www.youtube.com/watch?v=r8Th4WtKpDY>
- Please upload a draft of your essay 48 hours in advance, and bring at least one hard copy for your tutor, and if needed enough copies for the group to write comments or questions on during the session. Soft copies viewable to all.
- Please come punctually for your slot.

JUGGLING ACADEMIC CONVERSATION BALLS - REVISION

CK – content knowledge CT – Critical thinking L – Language NV – Nonverbal
IPC – Interpersonal Communication



OXFORD TUTORIAL DISCUSSION

- Is really a community of learners helping each other to sharpen up each other's ideas on an essay
- Is in fact a writing circle

OXFORD TUTORIAL DISCUSSION

- **Juggling the academic conversation balls in general**
- **Engagement with other POVs in particular**
- **Giving critical feedback**
- **Being open –minded to feedback, yet**
- **Being able to defend a position/point if necessary**
- **Referencing credible evidence and their sources**
- **Being sceptical/brave about evaluating claims or assertions that are not sufficiently backed up, or where explanation lacks clarity etc.**
- **Being or showing knowledge in topic**
- **Consistency of O+R+ E – opinion with reasoning and evidence**
- **Willingness to be part of a community of learners**

OXFORD TUTORIAL DISCUSSION

- Requires planning – you need to read all the essays in your group
- Needs synthesising and comparing and contrasting
- Needs time management

OXFORD TUTORIAL DISCUSSION ROLES – WRITING CIRCLE

P1 A and O - Facilitate discussion about what the essay is focussing on and whether or not this aim has been met in these three important areas	Thesis + Introduction + Conclusion
P2 Ideas - Facilitate discussion about how the ideas have been developed, is there cogency e.g. do ideas link from one to another logically? Are there fallacies?	Line of reasoning (content)
P3 Glue Facilitate discussion about whether paragraphs are well signposted in themselves and how they link to each other	Line of reasoning (language)
P4 Content Facilitate discussion about source credibility, engagement and selection of evidence	Credibility of sources and evidence
P5 Devils Advocate Facilitate questioning, looking for counterarguments and refutations. Bonus –questions that help essay writer see bigger picture or future implication	POVs and quality of refutations

LOGISTICS FOR ESSAY SUBMISSIONS (MONDAY AND THURSDAY GPS)

Teams	Preparation starts	Draft 1 essay due 48 hours on	Tutorial on	Draft 2 essay due
A	Thursday 24 October	Saturday 26 October	Monday 28 October PH * make up date _____ 1 st hour	Friday 1 November
B	Thursday 24 October	Saturday 26 October	Monday 28 October PH* make up date _____ 2 nd hour	Friday 1 November
C	Thursday 24 October	Tuesday 29 October	Thursday 31 October 1 st hour	Friday 1 November
D	Thursday 24 October	Tuesday 29 October	Thursday 31 October 2 nd hour	Friday 1 November

LOGISTICS FOR ESSAY SUBMISSIONS (TUESDAY AND FRIDAY GPS)

Teams	Preparation starts	Draft 1 essay due 48 hours on	Tutorial on	Draft 2 essay due
A	Friday 25 October	Sunday 27 October	Tuesday 29 October 1 st hour	Saturday 2 November
B	Friday 25 October	Sunday 27 October	Tuesday 29 October 2 nd hour	Saturday 2 November
C	Friday 25 October	Wednesday 30 October	Friday 1 November 1 st hour	Saturday 2 November
D	Friday 25 October	Wednesday 30 October	Friday 1 November 2nd hour	Saturday 2 November