Maximising opportunities to think through Good and Effective Questioning

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Aims of the session:

- Why do we ask questions?
- How can we ask better questions?
- How can we ask questions better?
Questioning is a key aspect of the teaching and learning process.
Mainly TWO purposes of questioning:

1. To provide key information that you can use to determine where learning currently is, and plan for future learning.
Mainly TWO purposes of questioning:

2. To stimulate thinking.
Establishing a Thinking Classroom

I expect you all to be independent, innovative, critical thinkers who will do exactly as I say.
Classroom Strategies: Ask Better Questions

How?
• Ask fewer questions
• Sequence questions
• Ask more open-ended questions
• Prepare challenging questions beforehand
Many of the questions we ask learners are not meant to be answered; they are really instructions (‘Is everyone sitting down?’), rhetorical questions (‘Do you think I didn’t see that?’ or ‘Doesn’t a square have 4 sides?’), or questions answered by the teacher.

The first step in asking more effective questions is to ask only the questions that you REALLY want learners to answer.
Sequence questions

• Ask questions in a patterned order

• Ask one question at a time
Ask more open-ended questions

From Studies done in classrooms

1 every $\frac{2}{3}$ seconds

They tend to be RECALL questions rather than questions requiring higher level thought.

Research shows that effective teachers use a greater number of higher order questions and open questions than less effective teachers.
Closed Questions

• Focus only on the knowledge of the content.

• Can be effective but they don’t encourage thinking skills or discussions.
• What is the title of the story?
• Who is the author?
• Who is the illustrator?
• Who are the main characters?
• Where did the story take place?
• When did the story take place?
Open-ended Questions

- Open-ended questions are more likely to focus on **thinking skills** and encourage discussion and reflection.

The teacher asks,

'Is 7 a prime number?'

The learner responds,

‘Yes, I think so.’ or 'No, it's not.'
Change the question to:

'Why is 7 a prime number?'

or

‘Why is 7 prime and 14 not prime?’
• What kind of person is Goldilocks? Give a reason for your answer.
• Goldilocks was a burglar. Do you agree or disagree, and why?
• What time of day do you think it is? How do you know?
• What lesson might you learn from the story?
• Think of a different ending.
• Din hi stampa ta’ pustier. Taqbel? Għaliex?
• Taħseb li x-xogħol tal-pustier huwa eħfef fis-sajf jew fix-xitwa? Għaliex?
• How is the 20 Euro cent different from the 2 Euro cent?

• Which answer is correct? Why?

• How can the times tables help us in our everyday life?

• Where can we use large numbers?
• Why is this sum right and this sum wrong?

• 7+2+3=12. What strategies did you use to come up with the answer?

• In how many ways can I make 5/10/20/100?
• Il-ħajja mingħajr mowbajls. Iddiskuti.

• Which slogan is likely to have the greatest impact? Why?

• Compare and contrast:
Bloom’s Taxonomy

1956 - Taxonomy of Educational Objectives: Cognitive Domain
Bloom’s Taxonomy

- Bloom identified six levels within the cognitive domain. These were reviewed by Anderson (1990).

These levels, in ascending order of sophistication, are:

1. remember
2. understand
3. apply
4. analyse
5. evaluate
6. synthesise
7. create
Aiming Higher: Bloom & Vygotsky in the Classroom

a Pedagogical Quickie by Marc-André Lalande
RECIT Provincial Service
for General Adult Education

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Canada, September 2012
Using Bloom’s Taxonomy to foster higher order thinking

The Three Little Pigs
Remember
Recall facts

- What is...?
- How did... happen?
- How would you describe...?
- How did... happen?
- Can you select...?
- Can you recall...?
- When did...?
- When did...?
- Why did...?
- Why did...?
- Who was...?
- Who were the main...?
How many pigs are there?

Match the names of the characters with pictures of the characters.

Arrange the story pictures in order.
Understand
Show understanding by finding facts.

- How would you summarise...?
- How would you contrast...?
- What can you say about...
- What is the main idea of...
- Which statements support...
- Which is the best answer?
- How would you classify...
- How would you compare...
- What is meant...
- Can you explain what is happening?
- How would you rephrase the meaning...

Ask Classify Compare Demonstrate Discuss Show Estimate Explain Observe Indicate Interpret Match Predict Purpose Relate Report Review Summarise
Describe what is happening in the illustration.

Predict what could happen next in the story.

Explain how the pigs/wolf felt at the beginning, middle and end of the story.
Apply
To use in a new situation.
Solving problems.

- What approach would you use to...?
- How would you use... to show...?
- How would you organise... to show...?
- What would you plan to do... to develop...?
- What would result if...?
- How would you apply what you learned to develop...?
- Can you make use of the facts to...?
- What facts would you select to show...?
- What examples can you find to...?
Would you talk to strangers? Why?

Did this story remind you of anything that has happened to you? What? Why?

The wolf wanted to eat the pigs but failed to do so. Select a different meal that the wolf would enjoy eating.
Analyse
To examine in detail. Make inferences and find evidence.
How do you think the wolf felt when he huffed and puffed the houses down? Why?

How do you think best describes how the little pigs felt when the wolf knocked on the door – happy, sad, scared, excited, alone.
Evaluate
To justify. Present and defend opinions by making judgements.

- What would you recommend?
- How would you evaluate?
- How would you rate the...
- How could you determine...
- What choice would you have made?
- What would you select...
- Based on what you know, how would you explain...
- Did you agree with the actions/ outcomes?
- What is your opinion of...
- How would you prove/disprove...
- Can you assess the importance of...
- Would it be better if...

Agree Argue Assess Award
Choose Compare Conclude
Consider Convince Criteria
Debate Decide Defend
Evaluate Explain Give reasons
Infer Interpret Judge Justify Measure Opinion Persuade Prove Rate Select
Recommend Test Why
Which character in the story would you choose for a friend. Why?

Compare this story to another story that you have read.
Synthesise
To change or create into something new.

Adapt Add to Build Change
Choose Combine Compose Construct Create Design Develop
Discover Discuss Formulate
Estimate Experiment Happen Hypothesise
Imagine Improve Invent
Make up Model Modify Plan Predict
 Produce Revise Rewrite Simplify
Solve Test Think
What part of the story would you change?

What would you have done differently if you were the wolf?

Rewrite the story in your own words from the wolf’s point of view.
Create
To make, invent, or produce original work.

- What plan can you make for...?
- Modify this to create a new version...
- Find an unusual way to...
- Generate ideas to...
- Find the reasons why...
- Formulate different possible solutions for this...
- What other way could solve...
- What design do you suggest for...?
- How would you change...
- Develop a different idea from...
- Design a campaign to...
- Come up with a way to...

Create Plan Invent
Compose Design Construct
Imagine Devise Make
Rearrange Formulate
Programme Film Publish
Produce Transform Suggest
Suppose Originate Change
Hypothesise Modify
Create another story using the same characters in the story.

Create another character and tell how the character would fit in the story.

Design a poster to advertise the story so others will want to read it.
Prepare challenging questions

Preparing 3-4 ‘key questions’ before a lesson or activity can help you to introduce the lesson and its learning intentions, structure the lesson, make links within the lesson and keep everyone on task.
• A range of answers:
  - What do we need for life? Water, telephones, clothing, cars, shelter, food. Why?
  - Are these food items good for you? Chocolate, fruit, milk, fat, sugar, salt, water, motor oil, rice. Why?
  - Liema minn dawn trid tuża biex tikteb ittra informali? Indirizz, il-Passat, il-Preżent, data, punteggjatura, tislima, tislija, numbri, paragrafi.

• A statement:
  - Multiples of 3 are always odd numbers.
  - Money brings you happiness. Agree or disagree? Why?
• **Right and wrong**

Why are these shapes quadrilaterals and these not? Why is this right and this wrong? $8 \div 2 = 4 \ 8 \times 2 = 4$

• **Starting from the answer/end**

The answer is a square. What might the question have been?

Bejn l-1939 u l-1945 kienu snin diffiċli għal Malta. Għaliex?

• **Opposing standpoint**

How could Cinderella’s stepmother become a better person?
Classroom Strategies: Ask Questions Better

How?
• Involve the whole class
• Provide think-time
• No hands up
• No put downs
• Think, Pair, Share
• Pose – Pause – Pounce – Bounce
• Answers on your mini whiteboard
Involve the whole class

- Address all learners rather than an individual.

- Engage the whole class by simply walking round the room while asking/directing questions.
Provide think-time

- Students need time to think, to know how long they have to respond.
- Increase wait time to 3 seconds for lower order questions and
- 10 seconds for higher order ones to improve correctness and quality of answers.
Improving questioning was one of the keys to raising attainment identified by Paul Black and Dylan Wiliam in *Inside the Black Box (1998)*
• Learners who have high self esteem answer questions all the time. These learners are getting smarter each day.

But what about the other learners?
• There are learners who are shy and do not want to raise hands.

• There are those who do not want to take risks and avoid being called on.

• There are those learners who are just lazy and do not want to think.
Thinking is NOT a choice but ALL learners have to think.

ALL learners need to be engaged in their learning.

Over reliance on the ‘volunteer’ method is to be avoided
Think, Pair, Share (TPS)

Teacher poses question, observation, or challenge

Learners think and write out answers individually

Learners pair up and combine their best answers

Learners share their new improved answer with the class

THINK-PAIR-SHARE (diagram by Jesse Gentile)
1. Pose

2. Pause

3. Pounce

4. Bounce

Mini-whiteboard

- Pose a question
- Give ‘wait time’
- Students hold up answers
Classroom Strategies:
Deal with Answers Productively

- All ideas are considered
- Use wrong answers to develop understanding
- Prompt pupils to further responses
- Listen and respond positively
Classroom Strategies: Generate Learners’ Questions

Teacher talk : Student talk

8:1 (America)

13:16 (Japan)

Hiebert et al., 2003

High Engagement

High Achievement
Classroom Strategies: Generate Learners’ Questions

- Model questioning for pupils
- Provide opportunities for learners to practise their skills
- Plan time for pupils’ questions and for dealing with them effectively
Establishing the right climate
<table>
<thead>
<tr>
<th>A questioning friendly classroom is a place where:</th>
<th>A questioning-friendly classroom is not a place where:</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Different responses to a question are encouraged</td>
<td>• Student responses to questions are put down</td>
</tr>
<tr>
<td>• Students build on each other’s responses</td>
<td>• Teachers are seen as the question-askers and students as the question-answerers</td>
</tr>
<tr>
<td>• Students are prepared to challenge or contest a response</td>
<td>• Students recited a response to a question rather than discuss it</td>
</tr>
<tr>
<td>• Students take risks and offer divergent ideas and opinions</td>
<td>• Students are concerned with expressing their viewpoint rather than responding to what someone else has said.</td>
</tr>
<tr>
<td>• Students generate questions for discussions.</td>
<td></td>
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</tbody>
</table>
Good teaching is more a giving of right questions than a giving of right answers.

Josef Albers