

# Facilitating Effective Questioners in our Schools

Teachers have long recognised that questioning skills are central to thinking and learning, and most teachers are keen to facilitate their pupils into being better questioners. However resources to support effective questioning have been fairly limited and the concept of what makes an effective question has remained vague for many teachers and their pupils. If we are to facilitate effective questioning in our pupils we need a clear concept of what we are trying to achieve and we need a defined construct that has been proven to make a difference in our pupils questioning skills. This article which comes from eighteen months of work on questioning across a range of fifteen schools will:

- Provide a simple overview of the field of questioning,
- Suggest a definition of what it means to be an 'Effective Questioner',
- Provide a simple definition for 'Effective Questions',
- Provide a rubric of questioning skills, appropriate to inquiry, that will assist in assessing Questioning development,
- Provide evidence of how this approach has been proven to raise pupils questioning skills.

## A simple Overview of Questioning

Broadly speaking there seems to be three main categories of questions that we use in normal daily life. They are Requests, Rhetorical, and Inquiry Questions. The main focus of this article is on Inquiry questions because these are the questions that are the powerhouse of learning.



### Requests:

these are the questions used when a person seeks permission, or seeks assistance from someone.

- E.g. "Can you lend me \$20?"  
"May I leave the room?"  
"Am I able to take my holiday from Dec 12 to January 12?"

### Rhetorical Questions:

The questioner knows the answer, is not seeking an answer, but has some alternative motive behind the question. For example they may be trying to make a point, demonstrate their own knowledge, or corner another person in an argument.

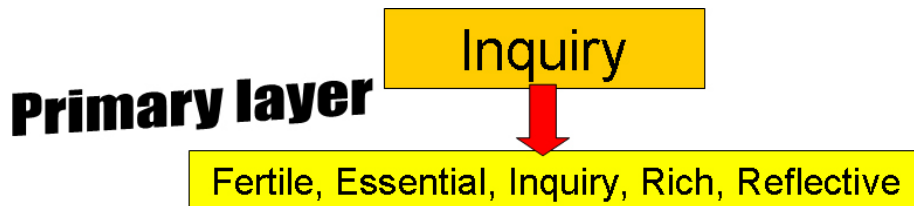
- E.g. "What time do you call this?"  
"Why are you so stupid?"  
"Are you kidding me?"

Rhetorical questions come in a number of forms, one of which is the **Disguised Imperative**. These are primarily a command disguised as a question. The question highlights the demand and usually requires an action rather than an answer.

- E.g. "Do we wear our muddy shoes inside the classroom?"  
"How do we act when we want to ask a question?"  
"What do we take with us to the library to put our books in?"

**Inquiry Questions:** An ‘Inquiry’ or ‘Information Seeking’ question is one posed by the questioner to obtain needed information within a specific context, aspect, concept, issue, or problem.

Seldom do Inquiry questions sit on their own. There are usually two layers of question. The primary layer consists of a question that opens or defines the area of learning. It may pose a problem, identify a need, or establish a concern/issue for investigation. Basically it sets the scene and provides a specific context for learning. These primary questions have been labelled by a variety of names including ‘Rich Questions’, ‘Essential Questions’, ‘Fertile Questions’, and Reflective Questions’.



### **Essential questions :**

Essential questions target the top of Bloom's Taxonomy (analysis, evaluation, synthesis). The answer will not be ‘found’ for a good Essential question because it requires the learner to construct their own answers and make their own meaning from the relevant information they have found.

### **Fertile questions :**

These are very similar to Essential and rich questions, the concept originates from Yoram Harpaz, but there are a clear set of parameters that define a Fertile Question:

- *open* – a question that has no one correct answer; it should have several different and competing possible answers.
- *undermining* – a question that undermines the learners’ basic assumptions (creates dis-equilibrium) and casts doubt on the commonly accepted; hi-lights basic conflicts, and has no simple solution.
- *rich* – a question that necessitates grappling with rich content that is indispensable to understanding humanity and the world; requires careful and lengthy research.
- *connected* – a question relevant to the learners, the society in which they live, and a discipline and field.
- *charged* – a question with an ethical dimension; charged with emotional, social and political implications that potentially motivate inquiry and learning.
- *practical* – a question that can be researched in the context of the learners, facilitators, and available resources, and from which research questions may be derived.

### **Rich questions :**

These are open-ended questions that require higher order thinking skills. That is they pose questions that are likely to have complex answers, require the use of multiple sources of information, and force the learner to form their own justifiable and defensible opinion.

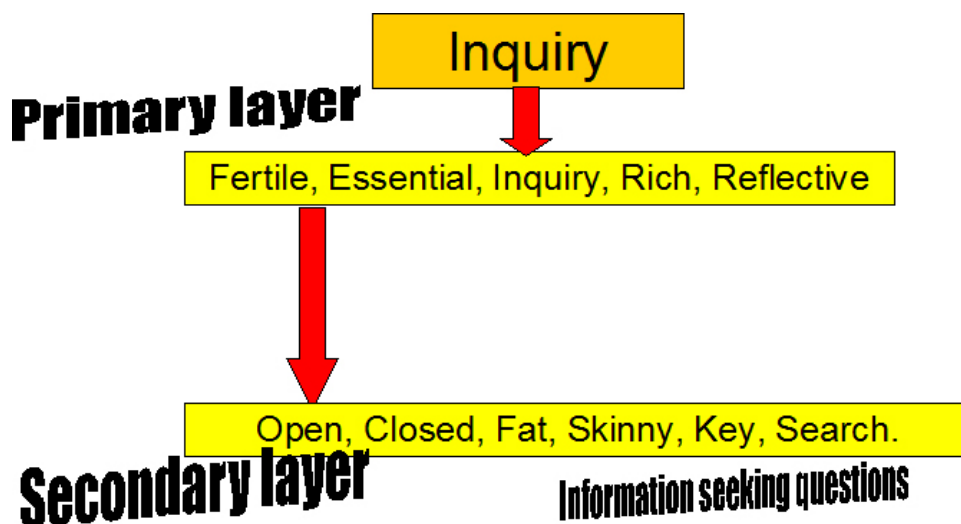
### **Reflective questions:**

These are self directed questions aimed at initiating and guiding one’s own thinking and reflection.

- E.g. “What is a good question?”  
“How could I have handled that situation better?”  
“What is the relationship between thinking and learning?”

Within the field of Inquiry Learning these primary questions may be teacher created, negotiated between teacher and pupil, or learner generated. There are a number of issues that need to be considered when creating these primary questions. Firstly the questions obviously need to be carefully structured and it takes skill and practice to create good questions at this level. Secondly it is the teacher's responsibility to ensure that questions are supported by relevant and valid information sources that are suited to the reading and comprehension of the learners before the inquiry is embarked on. Failure is an integral part of learning but there is no excuse for teachers who send learners into failure experiences because of a lack of preparation.

There is a secondary layer of questions that are the central core to learning. These are information seeking questions a learner asks to obtain specific information that will be utilised to fuel their learning. These are the questions that this article will focus on because they are learner generated, and the more skilled our pupils are at creating and asking these questions the better equipped they will be for independent learning. We need our pupils to be effective questioners, and to do this they need to be able to ask effective questions at this level of inquiry.



There are a number of types of questions that learners will ask at this level and they include Fact finding, Evaluative, Diagnostic, and Hypothetical questions.

#### **Fact Finding Questions:**

The questioner needs to acquire some specific facts relevant to the context or issue and these questions target the acquisition of those facts.

- E.g. "What is the capitol of New Zealand?"
- "Who invented the light bulb?"
- "What are some of the incidents that occurred on Captain Cook's 3<sup>rd</sup> voyage?"

#### **Evaluative:**

The questioner is seeking to identify opinion, belief or point of view.

- E.g. "What would do you think would be a good Christmas production?"
- "What do you think is an appropriate punishment for acts of terrorism?"
- "What do you believe about creation and evolution?"

**Diagnostic or Comparative:**

The questioner is trying to obtain information that will assist them to compare two items or to make a judgement.

- E.g. “What are the similarities between ---- and ----?”  
“What are the possible outcomes of ----?”  
“When would be the best time to -----?”

**Hypothetical:**

The questioner asks a question bound by a range of factors to limit the possible answers to a specific context.

- E.g. “If you had to choose a goalie for a soccer team what three major skills would you look for?”  
“If we had to stop using plastic bottles what options are there for hygienic containers?”  
“What would be the possible problems if we changed the wood for plastic?”

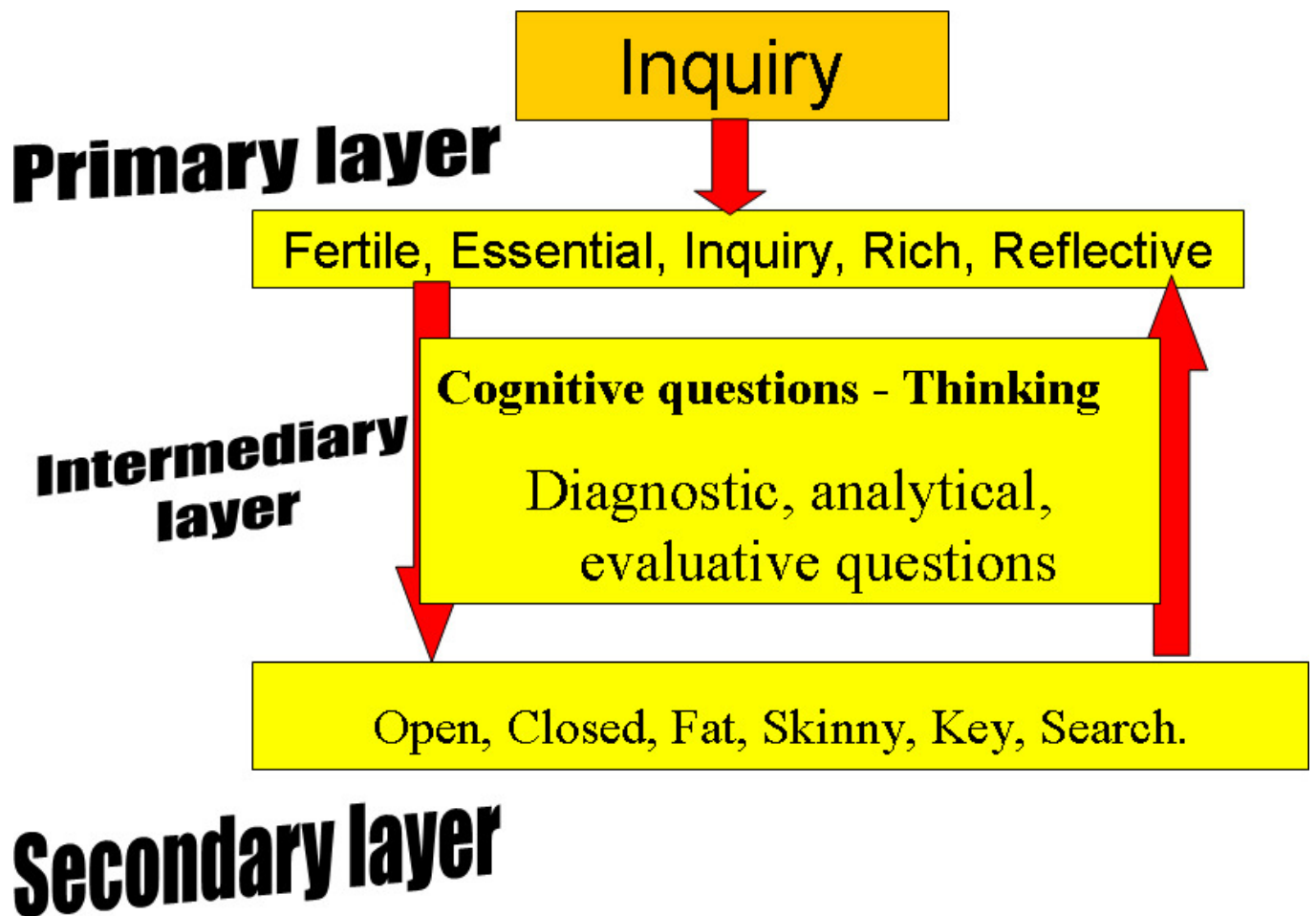
There are further question types that could be identified here, and the definitions are all contestable and debatable. What is important here is that whatever the question, the primary goal is to gain specific information and that there should be a purpose behind the gaining of that information.

The information gained from questions asked at this level is likely to be used for one or more of purposes that include:

- Gaining or deepening understanding
- Extending knowledge
- Improving skills
- Defining or clarifying issues
- Confirming facts
- Identifying fact and opinion
- Discerning bias or prejudice
- Ascertaining inferences and assumptions
- Analysing positions and theories
- Establishing supporting argument
- Critiquing someone else’s argument or position
- Creating a range of options
- Evaluating possible solutions
- Making a decision

All of these possible uses are important aspects and skills of independent learners, but all require valid and relevant information as their base. If poor, insufficient, irrelevant or invalid information is utilised as the base for any of these learning applications the learning is itself affected and may be invalid or weak as a result. The skill of questioning is the foundation that lays the base of valid and relevant information. The skill of questioning is the foundational tool of learning, a person who is a skilled and effective questioner has a major learning skill.

However there is also a third layer of questioning, which resides at the centre of thinking and learning. These are cognitive questions. Thinking is itself a process of asking and asking questions in the head. This cognitive process is what enables us to identify and create the primary layer questions. This cognitive process of asking and answering questions is what enables us to identify the gaps in information, knowledge and understanding and thus create the information seeking questions to help us to fill the gaps. These cognitive questions help us to sort, analyse, evaluate, apply, make links with the new information so we can create our new knowledge and understanding.



To summarise, a basic skill of learning is the ability to ask good information seeking questions because relevant and valid information is the fuel for learning.

### What is a 'good' or 'effective' question?

The word 'good' probably has too many value based associations to be beneficial. A better word would be 'effective'. What is an 'effective question'? There are two issues to be considered in defining and answering this. They are the purpose of the question and

The first issue relates directly to the purpose of the question. The immediate purpose of any 'Inquiry' question is to gain some specific information that is relevant to the context. Therefore an effective question is one that returns the needed relevant information. It doesn't matter whether the question is rich, open, closed, simple or complex; if it returns the required relevant information then it has been effective and accomplished the purpose. This indicates that closed or open questions can both be 'effective questions' if they achieve the purpose of bringing the required information to the inquirer. This also indicates that any question, be it rich, closed, open or any other definable type is an ineffective question if it does not return the information required by the seeker. This makes me query the validity of the approach I see in some schools where pupils are being encouraged to write rich or open questions as if they are definably better than closed questions. They are only better if they are effective in obtaining the required information, and sometimes they are not the most suitable question to ask. This requires us to take a deeper look at how we scaffold pupils into asking effective questions. The concepts of open/closed and rich questions contain some flaws and don't necessarily lead our pupils to asking effective questions and into being 'effective

questioners'. We need to look at this practice a bit more critically and make sure we are giving the right messages to our pupils.

The biggest issue with making a question 'effective' is to include in it the appropriate contextual words and phrases that will locate the question within the context and need. If the questioner wants to find out about the breeding cycle of goldfish, it would be inappropriate to ask a question about the predators that prey on goldfish. This indicates that there are a range of skills that an 'effective questioner' will need to create 'effective' questions.

The second issue in defining an 'effective question' relates to the source being used. An effective question is one that extracts the required information from the source being queried. Sources can vary hugely and may be printed text, digital text, images, audio visual, or human. Within this context it becomes obvious that any particular question may be effective when applied to one source and ineffective when applied to a different source. The questioner may have to apply the same question to a range of sources, in some sources the question will be ineffective, but that does not mean it will be ineffective in another source.

It is important to realise that an 'effective question' requires a match to the context and a match to the source. A question then needs to be contextually phrased and source relevant to be 'effective'.

In summary then, an effective question is one that returns the required relevant information from the chosen source.

## **What is an Effective Questioner?**

An effective questioner needs to have a range of skills. They need to be able to:

- Identify and clarify a problem, need or issue and its component aspects.
- Identify the contextual words and phrases that will help them to construct an 'effective question'.
- Create and pose 'effective questions'.
- Pose a range of 'effective questions' because a single question is unlikely to give the questioner all the information they require.
- Identify a range of possible sources from which they will be able to extract the answers to their questions.
- Persist in their questioning, taking a range of questions to a range of sources until they can extract the required information.
- Edit and re-draft questions using synonyms of contextual words and phrases, to assist in turning ineffective questions into effective questions.

Questioning obviously doesn't stand alone, a good questioner needs a range of other skills to help locate and extract the answers to their questions from the relevant sources, such as a range of search and location skills, textual and visual comprehension skills, thinking and analytical skills, and communication skills.

To summarise, an 'Effective Questioner' is one who can pose a range of 'effective questions' within a variety of valid sources and can persist until the required information is gained and validated.

## **A rubric of questioning skills:**

In the process of working with schools implementing inquiry learning and information literacy there has been no argument about the importance of helping our pupils develop better questioning skills. The difficult issue has been in finding, or developing, a construct that would incorporate the features of an 'effective question' and the skills of an 'effective questioner' in some form that would assist teachers in the two aspects of assessing development in questioning skills and assisting pupils to improve their questioning skills. The following rubric was developed and has now been trialled for eighteen months in a range of New Zealand schools. It is a rubric developed around the requirements of an effective information seeking question and the context for that question. The rubric consists of seven stages. For the sake of providing explanatory samples the following scenario will provide a context for the inquiry.

### **Scenario:**

At our school we have a problem with paper rubbish because we will soon not be allowed to burn our paper in the incinerator. We need to have a new solution to our paper rubbish problem. Fortunately we have a local paper recycling plant and this may help us to deal with our paper rubbish. You need to research paper recycling, find out what processes are used, and what we need to do at school so our paper can be used by the recycling plant. You will need to present a plan of action to the Board of Trustees that shows what we have to do so our paper can be recycled.

### **Stage 1:** Poses a statement or provides no response.

This stage recognises that many young learners are still developing a concept of what a question is and as a result are likely to make a statement instead of posing a question. Baseline evidence from twelve schools shows that pupils up to the ages of ten or twelve years of age pose statements instead of questions, or will pose a mixture of questions and statements, when asked to provide a number of questions about a supplied scenario or problem. Some pupils will also give a null response when given an opportunity to pose a question.

### **Sample Questions:**

We are going to do paper recycling.  
Our school burns paper.  
Paper can burn.

### **Stage 2:** Any irrelevant question.

Many learners will digress at tangents and pose questions that will not provide useful relevant information to the set context or problem. An effective question is one that fits within the context and whose answer will assist in developing understanding and/or creating a solution. These questions are questions that are tangential or unlinked to the specific context. There are a variety of possible reasons for this. They may not have understood the scenario, context or problem or they may have picked up on a peripheral aspect. Whatever the reason such a question is ineffective in terms of the problem or issue.

### **Sample Questions:**

How do we recycle plastic?  
What happens to glass?  
How are tins recycled?

### Stage 3: Relevant Yes/No/Maybe Questions.

According to most definitions these would be closed questions. However if such a question returns the information needed by the inquirer then it is a valid and effective question. To classify it must meet two requirements. First it will be a question that is worded in such a manner that it seeks a confirmation or denial (yes or no). To meet this requirement it will include one of a large set of yes/no question words. Secondly, to be relevant, it must contain enough contextual key words and phrases so that it will return information that is relevant and useful in terms of the context. It is important to note that if the question is posed to a person then there is likelihood that the person will be aware of the context, however that is an assumption and a good questioner will still incorporate contextual key words to avoid misunderstanding.

#### YES/No question words

There are too many of these to provide a full list here but the following are a sample:

is	can	does
could	would	may
should	can't	couldn't

#### Sample Questions:

Can we send our paper to the recycling plant?  
Is the recycling plant in Nelson?  
Do we have to stop burning paper at school?

### Stage 4: Questions that utilise one of the '7 Servants' and relevant key words.

The '7 Servants' is drawn from Rudyard Kipling's prose where he talks of six honest serving men named 'who, what, when, where, how and why'. In fact there are seven question words in the English language that do not return yes/no answers, by adding the word 'which' to Rudyard Kipling's list we have the seven prime question words a good questioner will use for every other layer of this rubric. Stage 4 questions also need to incorporate key contextual words which will help them to return relevant information and thus be effective.

#### Sample Questions:

How is paper recycled?  
How many processes does the paper go through when it is recycled?  
What day would the paper be collected from school?

Key contextual words utilised in these questions are:  
paper, processes, recycled, collected, school.

### Stage 5: Questions that utilise one of the '7 Servants' and relevant key words and phrases.

These questions move on a step further and will need to include contextual phrases, combinations of key words. This is an important skill especially when using digital resources because phrases are much more powerful than single words when using digital search strategies.

#### Sample Questions:

What do we have to do to our paper rubbish at school so it can be recycled?  
What processes are used in paper recycling?  
How do we get paper ready for the recycling process?

Phrases utilised in these questions are:  
paper rubbish, paper recycling, recycling process.



**Stage 6:** Questions using one of the '7 Servants' and synonym/s of key words.

This is an essential skill in creating effective questions and in trouble shooting or improving stage 3 to 5 questions. Often a word may be relevant to a particular context but may still not be the best word. For instance if the inquirer was wanting to know how an aboriginal humpy was built then the word 'built' would be an important key word, however if the inquirer put some thought into the words an author would be likely to use they may realise that 'constructed' or 'construction' would be better words to use. The inquirer may have identified an initial set of key words and then examine that set for alternative synonyms and used these to compose an effective question.

Synonyms utilised in these questions are:  
Stages ... instead of processes  
Requirements ... instead of need  
Utilised...instead of used

**Sample Questions:**

What are the stages of paper recycling?

What are the pickup requirements with paper that is going to be recycled?

What has to be done to paper rubbish so it can be utilised for recycling.

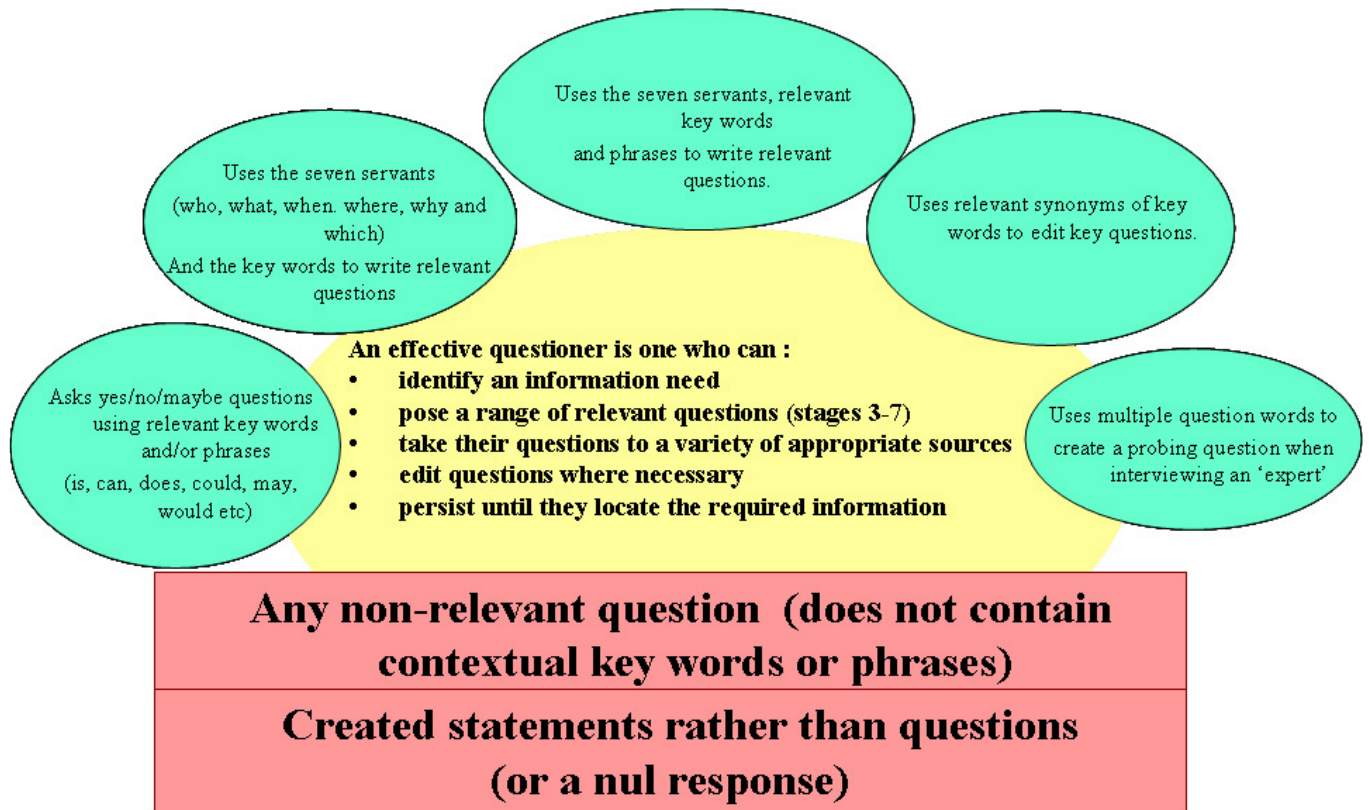
**Stage 7:** Probing questions using 2 or more servants combined used when interviewing a person.

These are the probing questions a person may ask an expert in an interview situation, they are often in two or more parts, one that opens up an aspect and the second part that digs deeper into that aspect. This requires two or more of the 'servants' to be used in the question along with the usual contextual key words and phrases.

**Sample Questions:**

What are three things we need to do to our paper rubbish and why are they important for paper recycling?

What types of paper are suitable for recycling and how do we know how to sort it properly before it is collected?



## Evidence of success in raising pupils' questioning skills

We are now 18 months on from the first introduction of this rubric into a school and there are now at least 18 schools through the country using this rubric. A fairly standardised approach is used where schools: Carry out a baseline assessment collecting up to five questions, related to a specific scenario, from every pupil in the school.

- These questions are assessed, moderated and the results recorded in a specially constructed spreadsheet, which allows for easy analysis of school wide data for a wide range of gender, age, ethnic and time at school cohorts of pupils. The spreadsheet examines the range of questions asked by each child identifying the highest and lowest level of question asked by each child.
- A large copy of the rubric in each classroom along with sample questions.
- Teachers model questions from across the rubric during all curriculum activities.
- Teachers also model making changes to questions to lift them to higher levels of the rubric.
- Pupils are encouraged to identify where their own questions fit on the rubric and to modify their questions to meet the criteria for a higher stage of questioning.
- Most of these schools are also implementing an Inquiry Learning approach so pupils are continuously put into learning situations where they have to collaboratively and individually create questions and seek information for problem solving and inquiry purposes.
- Teachers work with individual pupils as well as groups of pupils in terms of improving questioning skills in all curriculum areas.
- Follow up assessment is carried out each year with the spreadsheets used for school wide tracking and analysis.

**What are the results?** The following tables are drawn from the first school to complete a full year of work with this emphasis on questioning skills. A baseline assessment was carried out in April of 2006 with a follow up assessment carried out in April of 2007. These tables cover all pupils at school on the assessment day, so it must be realised that the 2007 data includes children who have come into the school during the year and haven't had the same exposure as some other pupils. We realise that data can be glitched by any number of factors, so it is the general trend illustrated by these tables that are exciting. (Figures do not add to 100% due to absences)

	2005	2006
	yr 1B	yr 2 B
stage 7		
stage 6		
stage 5		
stage 4		21%
stage 3		62%
stage 2	12%	6%
stage 1	71%	3%

	2005	2006
	yr 1G	yr 2 G
stage 7		
stage 6		
stage 5		
stage 4		18%
stage 3		59%
stage 2	17%	5%
stage 1	44%	9%

2005 Year 1 pupils show a major gain when tested again as year 2 pupils in 2006.

	2005 yr 1	2006 yr 2
stage 7		
stage 6		
stage 5		3%
stage 4		31%
stage 3		11%
stage 2	20%	54%
stage 1	80%	3%

This data demonstrates the achievement of yr 1 pupils in April 2006 who had experienced no specific teaching on questioning compared with the yr 1 children in 2006 who had experienced 3 months of facilitation with questioning skills.

A few other random tables show consistent gains right across the school.

	2005	2006
	yr 2 B	yr 3 B
stage 7		
stage 6		
stage 5		
stage 4		31%
stage 3	12%	38%
stage 2	48%	3%
stage 1	32%	10%

	2005	2006
	yr 2 G	yr 3 G
stage 7		
stage 6		
stage 5		
stage 4		54%
stage 3		38%
stage 2	63%	4%
stage 1	21%	

	2005	2006
	yr 5 B	yr 6 B
stage 7		
stage 6		
stage 5		13%
stage 4		33%
stage 3	63%	33%
stage 2	31%	13%
stage 1		

	2005	2006
	yr 5 G	yr 6 G
stage 7		
stage 6		13%
stage 5	5%	13%
stage 4	16%	31%
stage 3	21%	25%
stage 2	47%	
stage 1		

**To summarise:**

The evidence is clear: If we recognise questioning skills as central to independence as learners, it is possible to format a construct around the concept of effective questioning, and introduce learning and teaching strategies that can make an identifiable difference to pupils' questioning skills. The evidence from this school is being supported by further evidence now coming from other schools as they reach the end of their first year of seriously working at questioning skills.