2 The key skills of an economist

The famous economist John Maynard Keynes described, more than 70 years ago, the skills that a 'master economist' must possess:

> He must reach a high standard in several different directions and must combine talents not often found together. He must be mathematician, historian, statesman, philosopher – in some degree. He must understand symbols and speak in words. He must contemplate the particular in terms of the general, and touch abstract and concrete in the same flight of thought. He must study the present in the light of the past for the purposes of the future. No part of man's nature or his institutions must lie entirely outside his regard.
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> *Essays in Biography, The Collected Writings of John Maynard Keynes*, vol. X, Royal Economic Society, Macmillan Press Ltd, 1972.

This is an ambitious and also an inspiring list. It gives an indication of the skills that Economics students need to gain. They have to communicate quite complex ideas and theories in a clear manner, undertake numerical calculations, and interpret data presented in a variety of forms. They also have to analyse and evaluate economic problems and solutions, interpret and use diagrams, and employ ICT (Information and Communications Technology) skills.

In developing these skills, it is useful to apply a variety of teaching approaches and activities. Variety increases student motivation, and different students are likely to respond well to different activities.

As students' skills develop, they will find the subject increasingly more comprehensible and rewarding. They will learn to think as an economist and to use the tools of an economist.

Oral communication

Developing candidates' oral communication increases their confidence, makes it more likely that they will ask when they do not understand something, helps them to formulate ideas and arguments, and enables them to learn from each other.

Question-and-answer sessions

These are a simple and effective way of promoting oral skills that can be used throughout the course. They are a good way of checking at the start and end of a lesson students' ability to recall key points, and they can be used during the lesson to assess understanding. They also permit differentiation as more searching questions can be directed to the more able students and more straightforward questions to the less able students.

Class discussions

These can help to develop oral communication skills, but they have to be carefully planned to avoid the discussions drifting and to ensure that all students are involved. To achieve this, students can be given briefing sheets with discussion points and, on occasion, can be divided into smaller groups, with representatives from each group reporting back findings to the class.

Role playing and simulations

These can be used to develop not only oral skills but also data interpretation and writing skills. Students often respond very positively to such activities. They enable students to understand the factors influencing economic decisions, provide variety in classroom activities, and again generate opportunities for differentiation.

Presentations

Requiring students to give presentations is another way of advancing their oral and writing skills. Students can be asked to research a topic individually, in pairs or in groups, and then to present their findings to the class. Presentations can also enable students to make use of visual and ICT equipment.

Teacher activity 2.1

Arrange some simulation exercises for students, for example:

- **The budget** The roles could include government officials, company directors, journalists, pensioners and public workers. Briefing notes could be given to each participant about the state of the economy and their situation. Government officials and their advisers could be asked to draw up and present a simplified budget. The other participants could be asked first for what they want from the budget and then for their reaction to the budget.
- **Starting up a business** The roles could include entrepreneur(s), business advisers, rival firms, bankers and consumers. Those setting up the business and their advisers could consider what factors would influence whether the business will be successful, the type of business organisation to operate, and what their strategies will be. Bankers could be asked what factors will influence whether they will lend to the company and what conditions they might impose; rival firms, how they will react to the entry of the new company into the market; and consumers, whether they would switch to the new company's products.
- **The government as an employer** The government is planning to open a new hospital. The roles may include government officials, employers in a private-sector hospital, trade-union representatives, skilled workers (e.g. doctors) and unskilled workers (e.g. porters). Government officials could be asked to consider job specifications and salaries in order to draw up an advertisement. Private-sector employers could be required to consider the effect on their recruitment and to prepare a report on how they will respond. Trade-union representatives could be asked to consider how they would encourage the new employees to join them and to draw up a list of benefits the workers would gain on joining. The workers could be set the task of considering what factors might have influenced their choice of occupation and what will determine whether they will apply for jobs at the new hospital.
- **Money** A country experiences hyper-inflation. The government withdraws the country's paper money and coins. It meets to decide what form of money to use (e.g. gold, sea shells, leather strips and playing cards). Each group should consider to what extent a particular asset has the characteristics of money and how effective it would be in carrying out the functions of money.

Student activity 2.1

Each member of the class is given responsibility for noting developments in a particular aspect of the economy or an industry, and reporting back to the class at regular intervals.

Written communication

To answer examination questions in a relevant and lucid manner, it is obviously important not only that students understand the concepts they are discussing but also that they have good language skills and feel confident in using Economics terms.

There is a variety of ways of seeking to develop students' ability to write Economics answers in a clear and relevant way. Encouraging them to read widely, including extracts from textbooks and articles in Economics magazines and newspapers, should expose them to good writing and a variety of writing styles.

To increase the accuracy of their written work, students could be asked to produce their own Economics dictionary. When they come across an Economics term, they can add it to their dictionary with an appropriate definition. You should check the definitions regularly.

An accurate dictionary and clear notes can be used by students to inform their answers. Most students are likely to need advice on note-taking. (See pages 9–12.)

Worksheets are particularly useful in developing understanding of the subject and written skills. At the start of the course these can concentrate on short-answer questions assessing knowledge, understanding and application. If students have limited English-language skills, early worksheets can require students to select the appropriate words to use to fill in gaps.

As the course progresses, these worksheets can become more demanding, requiring longer answers and assessing not only knowledge, understanding and application, but also analysis, judgement and decision-making.

Partway through the course students can be introduced to past examination questions. In providing guidance to students on how they answer questions, it is important to emphasise that they should pay particular attention to the directive words in questions. As examination reports stress:

> To gain the highest marks in questions that ask for a discussion, candidates should present more than one side of an argument and then come to a conclusion. They should also be prepared to present their own view of the matter . . . They should decide whether, for example, the advantages outweigh the disadvantages, or the case for a given change mentioned in the question is greater than the case against. They should then clearly state what they conclude.

Note-taking

Note-taking is an important written communication skill and one which should be seen as part of active learning. An ability to take good-quality notes from a variety of sources including lessons, books and television programmes will help a student progress through the course and stand them in good stead for the future.

Notes serve a number of purposes, including identifying key points, analysing data and providing information for classwork, homework and revision purposes.

Many students waste time and effort writing down everything a teacher says and every word from a section of a textbook to very little purpose. In practice you are likely to have to help students develop their note-taking skills.

You could start by giving them some advice, including:

- record the source of the notes and the date;
- take notes for a specific purpose;
- think about what you are hearing or reading;
- consider what information you need – be selective;
- write concisely;
- use your own words where possible;
- write clearly;
- leave plenty of space so other points can be added later;
- use headings and subheadings;
- use lettering and numbering schemes;
- emphasise key points with underlining, highlighters and capitals;
- include diagrams where appropriate;
- use abbreviations for common words and for Economics terms.

You could explain that, whilst linear notes are the most common way of making notes, there may be occasions when students may wish to use tables, flow diagrams or spider diagrams. Figure 2.1 is a spider diagram that summarises some of the key points about diagrams.

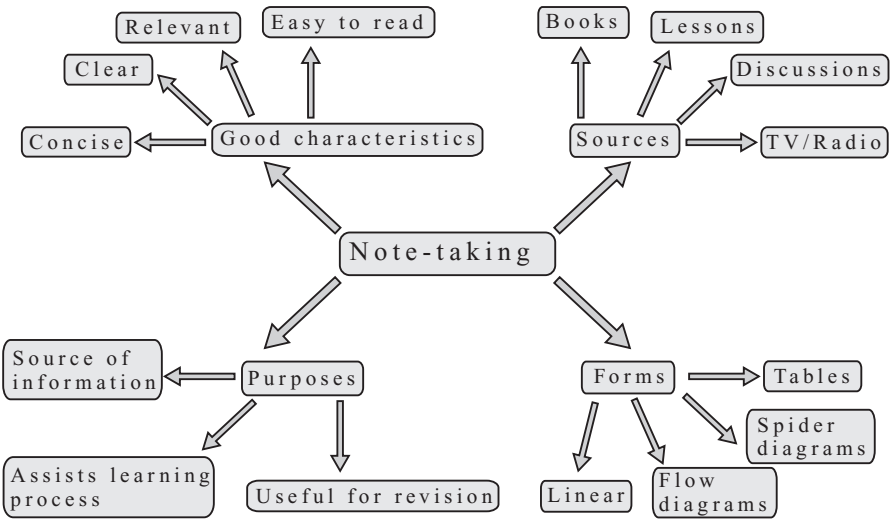


Figure 2.1: Spider diagram

Then you could show them examples of good and bad note-taking. For example, the following extract could be used for notes on gender imbalance in China.

Example 2.1: Note-taking

China, the most populous nation on Earth, could find itself dealing with the combined frustrations of as many as 40 million single men by 2020 because of its one-child policy in creating a shortage of female babies.

In an unusually frank speech on China's looming demographic crisis, Li Weixiong, who advises the country's political consultative conference on population issues, said a cultural preference for boys was creating an artificial disparity between the number of boys and girls that represents 'a serious threat to building a well-off society'.

Mr Li said the gender ratio had stayed relatively normal until 1982 – two years after the Chinese authorities imposed the one-child rule – at 100 girls born for every 108 boys. But by 2000, the ratio had shifted significantly to about 117 boys to 100 girls. The disparity is even bigger in rural areas, where the boy-to-girl imbalance is estimated to be as high as 130 to 100.

Abortions are not the only cause of the imbalance. There is alarming evidence that the intense pressure on couples to make sure their child is a

boy has prompted a resurgence of female infanticide, despite attempts to stamp out the centuries-old practice.

Rural families are said to be particularly tempted to kill female off-spring, such is the pressure to produce a child capable of coping with the physical demands of farming and prevent cash-strapped farming households from being plunged even deeper into poverty.

In some cases, according to reports, other girls are hidden from the authorities or die at a young age from neglect.

Even in urban areas, boys are generally preferred because they are regarded as more able than girls to provide for their families, care for elderly relatives and continue the family line.

Extract from '40m bachelors and no women . . . the birth of a new problem for China', by Justin McCurry and Rebecca Allison, *The Guardian*, page 3, 9 March 2004.

Bad note-taking

China is the most populous country. It could have 40m single men by 2020 because of its one-child policy which is creating a shortage of female babies.

Li Weixiong, who advises the country's political consultative conference on population issues, said that there were too many boys because of cultural preference. Gender ratio was relatively normal up to 1982 (108 boys for every 100 girls) but by 2000 it changed to 117 boys to 100 girls. Bigger disparity in rural areas where it is 130 boys to 100 girls.

Imbalance is caused not just by abortions. The pressure on couples to make sure their only child is a boy has resulted in a resurgence of infanticide.

Rural families are particularly tempted to kill girls because of the need for boys for farm work. Some girls are hidden from the authorities and some die due to neglect. Even in urban areas boys are preferred as more able to provide for families, care for elderly relatives and continue the family line.

In this case the note-taking has essentially involved copying down all but a few of the original words. The time has been spent writing, rather than thinking about and ordering the information. The notes are neither easy to refer to nor easy to remember.

Good note-taking

Gender imbalance in China

The problem

Too few girls being born. Government policy introduced in 1980 = families can only have

one child. They are opting for boys.
1982 ratio = 108 boys:100 girls
2000 ratio = 117 boys:100 girls (130:100 in rural areas)

Ways used to ensure 1 child = boy
1. abortions
2. murder of baby girls – especially in rural areas
3. neglect of baby girls

Reasons why boys preferred
1. thought more capable of manual work
2. expected to have higher earnings – more capable of supporting elderly relatives
3. will continue family line

Source: Guardian 9/3/04

Teacher activity 2.2

Show students 15 minutes of a video/DVD. Ask them to take notes on a topic from the programme. Then divide the class into small groups and ask them to compare their notes and produce one set of notes for the group. As a whole class, discuss the strengths and shortcomings of the notes produced.

Teacher activity 2.3

Produce a set of cards showing common abbreviations such as *i.e.* and *e.g.*, and Economics abbreviations such as *PED* and *GDP*. Make a second set of cards with explanations of the abbreviations. Ask students, in groups, to match these.

Numeracy

At this level the key numerical skills are:

- calculating percentages;
- calculating percentage changes;
- calculating averages;
- interpreting index numbers;
- interpreting statistical tables;
- distinguishing between changes in growth rates and absolute changes.

You may find that your students have very different levels of mathematical competence. Even some of those with reasonable levels of

numeracy may find numerical work rather off-putting. It is important to try to put them at their ease and to make them confident in undertaking numerical calculations. Confidence is the key to numerical competence, and this is gained through practice.

Some of the calculations that students will have to undertake are ones they are likely to be already familiar with. For example, in calculating total revenue, students have to multiply price by quantity, in calculating average cost they have to divide total cost by output, and in calculating profit they have to deduct costs from revenue.

Some students may be familiar with calculating percentages and percentage changes. As these are important calculations, it is worth checking early on in the course that all students are able to do them.

Of the three main ways of calculating the average, the most important one for Economics students is the **arithmetic mean**. This is relatively straightforward to calculate (total divided by the number of units). In coursework students may also make use of the **median** (the middle value of a series of figures) and the **mode** (the number occurring most frequently).

Understanding how index numbers are constructed will strengthen their ability to calculate and interpret index numbers in an Economics context. It also gives them the option of using index numbers in coursework.

Time should also be devoted to exploring the difference between changes in growth rates and absolute changes. Students can be asked, for instance, to interpret time series or tables showing economic growth rates or inflation rates.

Student activity 2.2

In groups or individually students could be asked to do the following:

- Calculate what percentage of the class is studying mathematics.
- From local newspaper advertisements, calculate the average price of houses or the average rent in the local area. This average can be tracked and compared over time.
- Convert national output figures into an index and work out annual percentage changes (economic growth).
- Calculate the cost of a basket of shopping in the local area on one day, and a month later calculate the cost of the same basket.
- Select four items – for example food, clothing, travel and books – and ask class members how much they spend a month on these items. Total the amounts and work out what proportion is spent on each item.

Teacher activity 2.4

Consider the strategy you would adopt in each of the following cases:

- a student finding it difficult to calculate price elasticity of demand;
- some members of the class do not understand the differences between percentage changes and changes in percentage points;
- a student interprets a fall in the inflation rate from 12 per cent to 8 per cent as a fall in prices;
- students are confused over the meaning of index number figures.

Interpreting data

Economists spend much of their time interpreting data. It is a skill which enables economists to evaluate economic theories, to examine economic trends and to assess the effects of economic policies. Its importance is reflected in examinations. It is tested in multiple-choice papers, in coursework and in structured questions papers. In such papers the data may come in a variety of forms, including newspaper articles, extracts from books and reports, statistical data and diagrams.

When answering questions based on given data, there are a number of key points of advice for students:

- Check the date and source of the data.
- Read through the questions first so that you know what you are looking for in the data.
- Check the data carefully. Take note of any general heading, headings of a table, footnotes and axes of diagrams. For instance, check whether statistical data is given in real or nominal figures.
- You might want to highlight key sentences.
- Check carefully whether figures are showing absolute changes or percentage changes.
- Go back and check the marks allocated to each question as this will give you an indication of the time you should devote to each one.
- You can answer the questions in any order, but it is advisable to answer them in the order in which they are set. This is to avoid overlap in your answers. It is also because the questions will have been set in a logical order and answering one question may help you answer the next question.
- Make use of both the data and your knowledge and understanding of Economics in answering the question.
- Make sure that what you write is clear and relevant.
- If appropriate, include diagrams in your answer.

Problem-solving

Much of Economics is about problem-solving. A good economist is one who can analyse the causes of a problem – for example, unemployment, pollution or world poverty – examine the consequences and make reasoned judgements about possible solutions.

Economics students need to consider different viewpoints and to base their decisions on economic analysis. Many students initially base their judgements on their own experience only and think in terms of one right answer to a problem, expecting the teacher to provide that 'answer'. They should be encouraged to distinguish between evidence and opinion, and to appreciate that the real world is a complex and ever-changing place, that economic theory is subject to limitations, and that there is often no 'right answer'.

Student activity 2.3

After having studied the topics, students could be asked to:

- give a presentation, perhaps in pairs, on the causes of population change in the country;
- consider what factors will determine whether allowing a foreign chemical company to set up in the country would provide a net benefit.

Diagrams

Diagrams play a vital role in Economics. They are used, for example, to illustrate changes in economic variables over time, to analyse changes in variables, and to assess the nature of economic relationships. It has been said that a picture is worth a thousand words. The same applies to diagrams.

Students need to be able to plot and draw diagrams, particularly demand and supply diagrams, and to interpret a range of diagrams. They should be required to use and comment on diagrams from the start of the course. This will increase their confidence and the accuracy of their work.

Drawing diagrams

Students should be encouraged to:

- produce clear diagrams – approximately a third of a page in size;
- use a ruler to draw the axes;
- label the axes accurately;
- label the curves accurately;
- explain what the diagram is showing.

Student activity 2.4

Each of the following diagrams contains a mistake, an omission, or a mistake and an omission. Make the necessary corrections and additions.

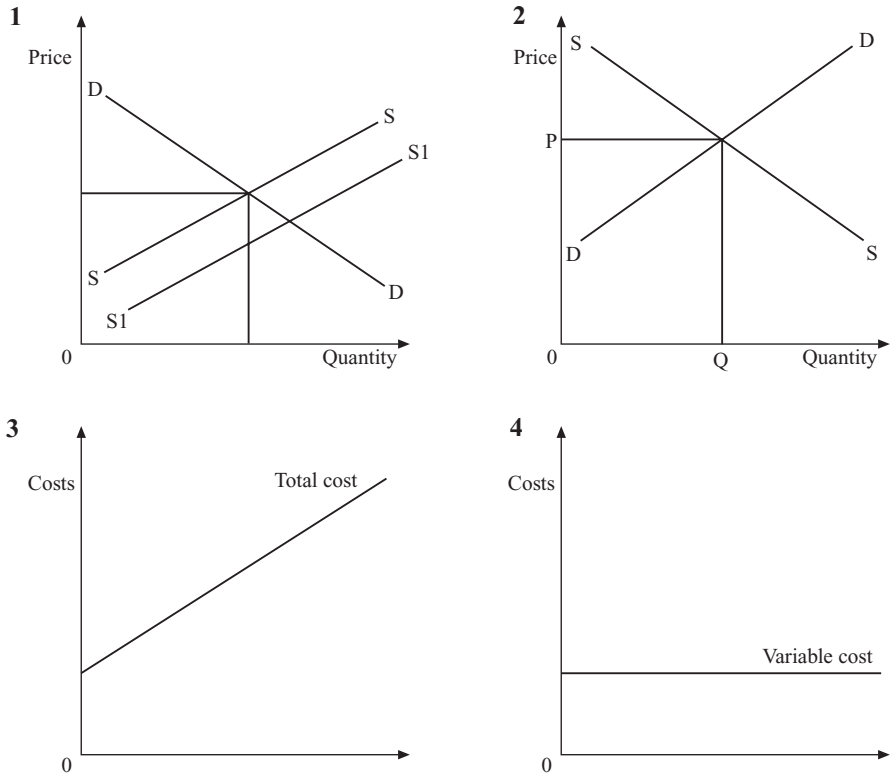


Figure 2.2: Common economics diagrams

Interpreting and using diagrams

Students should be familiar with a range of diagrams, including graphs showing the relationships between variables, pictograms, pie charts, bar charts, time series graphs and cartograms.

Graphs showing the relationships between variables

An example is demand and price. Students need to recognise whether the graphs show a positive or a negative relationship. They should check what the axes represent, the scales, and whether the value of one variable rises or falls in response to a change in the other variable. Care has to be taken in interpreting graphs. A graph illustrates a possible relationship but does not itself prove or explain that relationship.

Pictograms

These use pictures or symbols to show data. For example, a pinman could be used to represent 100,000 unemployed, as shown in Figure 2.3. A key has to be provided with a pictogram, indicating the quantity represented by each picture. Pictograms have the advantage that they can present data in a simple and clear manner and so can be useful in coursework. However, it may not be possible for a symbol to represent a low value since they may involve the use of too many pictures or symbols in some diagrams.

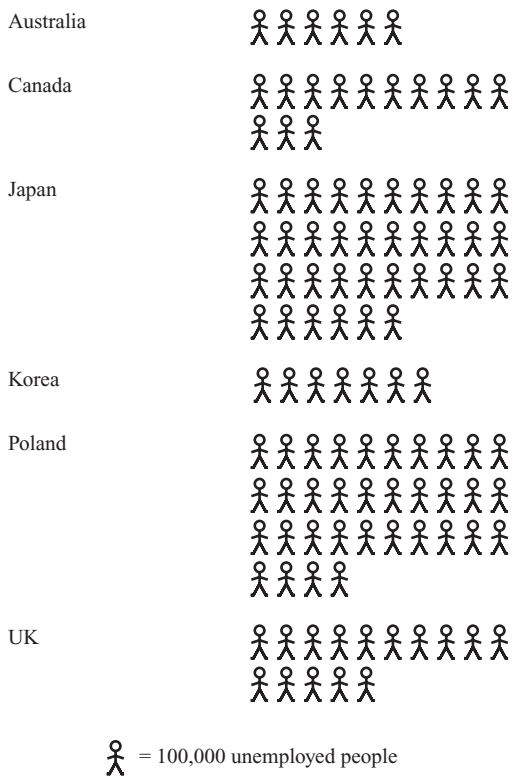


Figure 2.3: Unemployment in 2004 in selected countries

Pie charts

The name is derived from the fact that these circular diagrams are divided into slices. These are designed to be easy to interpret. They usually show the percentage values of the components of a total; for instance, the percentage contribution of particular taxes to total tax revenue.

When showing percentages, the percentage has to be multiplied by 3.6 (since total percentage = 100, whilst the total value of degrees = 360). So, for example, 40 per cent would be converted to 40 × 3.6 = 144 degrees. If actual figures are used, they should be expressed as a fraction of the total and then multiplied by 360. For example, rent of $60 out of a total cost of $300 would be converted to $60 ÷ $300 × 360 = 72 degrees.

Bar charts

These consist of one or more bars (columns), in which the length of the bar indicates the magnitude of the data. They are used to show a comparison of the size of the quantities of similar items. The bars can be drawn vertically or horizontally. They can also be drawn with or without a gap between them. Bar charts are quite often used in multiple-choice papers.

Time series graph

This is the name given to a series of figures recorded over time. The series may be plotted at daily, weekly, monthly, yearly or another interval of time, and the horizontal axis (the *x* axis) is always chosen as the time axis. Students should be taught how to read a trend from a time series graph.

Cartogram

This is a way of presenting geographical data. It involves drawing a map to show, for example, unemployment percentage by area. Shading can be used, with a key or figures placed on the map. It involves more preparation than some diagrams since a map has to be drawn or reproduced and divided into the desired regions. Nevertheless, it can be a clear and attractive way to display information and can be used in coursework.

Teacher activity 2.5

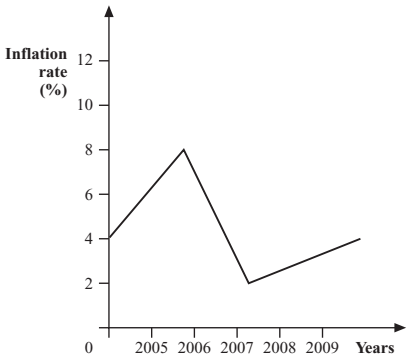
Ask students to present Economics information in a variety of forms. For example, students could be asked to compare a range of countries' economic growth rates on a bar chart, the country's inflation rate over the last ten years on a time series graph, regional income levels on a cartogram, share of different forms of government spending in total government expenditure on a pie chart, and the population of a number of countries on a pictogram. The best work could be displayed on the classroom wall.

Student activity 2.5

1 Decide which would be the best form of diagram to illustrate:
a) the relationship between the supply of labour and the wage rate;
b) the current account position of a country over the last five years;
c) unemployment rates in different countries.

2 Explain what the following diagrams show.

1



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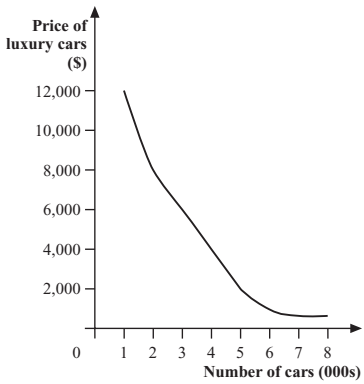

Figure 2.4: Interpreting diagrams

ICT skills

ICT is becoming increasingly important for students of all subjects. Encouraging students to develop their ICT skills will enhance their learning in Economics in a number of ways. These include increasing their access to information, enabling them to undertake investigations, and improving the presentation of their work. Students can also undertake learning activities and assess and model economic performance and decisions by using relevant websites.

LOOKING BACK

This chapter has emphasised the need for Economics students to develop a range of skills. In reviewing this chapter you might want to consider the following:

- Do you stretch all of your students' oral skills sufficiently?
- Are there opportunities for you to use simulation exercises?
- How do you address the problem of students taking different amounts of time to complete worksheets?
- How can you best integrate the development of numerical skills into your teaching?
- Do you encourage your students to recognise the limitations of Economics data?
- How is data interpretation linked to other skills?
- Do you make sufficient use of diagrams throughout the course?
- How could the use of ICT enhance your students' skills?