Analysing training needs

A guide for the Global Learning Centre

Delivered by Bryan Hopkins

Contents

Introduction

This workshop covers the basic principles of analysing training needs using a systems approach.

It will show you how to:

- define a problem
- collect relevant data
- explore the problem so that you understand it more clearly
- generate ideas that can solve the problem
- decide what training solutions may be appropriate
- implement your solutions.

When is a training needs analysis necessary?

We usually carry out a training needs analysis when there is a perception that a problem exists, which means that someone feels that something around them is unsatisfactory.

This implies that the exact definition of a problem may depend on their particular perspective. And of course, what one person sees as a problem another may not see as a problem at all.

There are different ways of describing problems:

- Simple problems have a small number of elements but may still be hard to solve.

- Complex problems have many different elements and a complicated structure.

- Well-defined problems can be clearly expressed.

- Ill-defined problems can be difficult to describe.

In organisations most problems can be described as complex and ill-defined.

Most problems in organisations come to light because they affect performance in some way. For example:

- Jobs are taking longer than they should.

- People are not achieving as much as they could do.

- People are not following rules or instructions.

When faced with such situations managers often react quickly and come up with solutions that only tackle the surface problem, not the cause. They then find that the problem resurfaces in another form or somewhere else.

This workshop will help you to understand the causes behind problems so that you can come up with both training and non-training solutions that are more effective in the longer term.

Problem solving and decision-making

Training needs analysis is a particular form of problem-solving. This and decision-making are connected activities. There are many possible definitions for each of these activities, but here we regard:

- problem-solving as a process for exploring causes of problems and identifying potential solutions

- decision-making as a process for identifying a solution to implement.

As such, there is an emphasis in this workshop on the former, but it also covers the latter.

What causes problems?

Invariably, problems with performance are caused by a combination of different factors.

When looking at the root causes of performance problems, Tom Gilbert proposed that a person's behaviour in the workplace resulted from the combination of a:

- 'repertory of behaviour', the person's ability to process information, their capacity to use necessary equipment and instrumentation, and their motivation for the task

- 'supporting environment', the information they are given regarding the task, the equipment they have to carry it out and the incentives they are given for completing it.

Gilbert called this the Behaviour Engineering Model, and it is illustrated here.
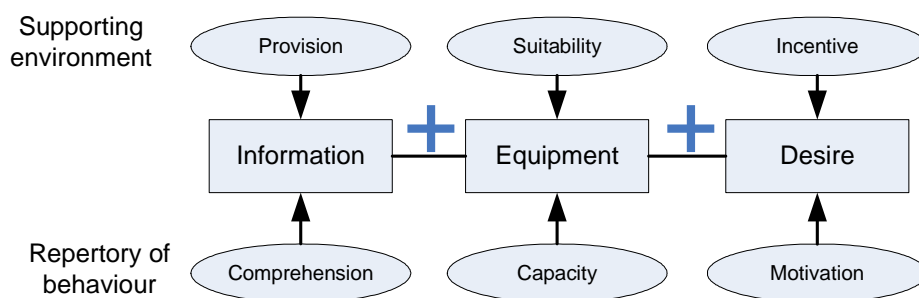
The model means that we need to consider three separate areas when analysing performance, information, equipment and desire, and for each of these there are two dimensions, one which comes from the person themselves and the other from the actual workplace.

Of the three areas, arguably the most important is information: indeed, Gilbert claimed that more than half of the performance problems encountered in the workplace could be traced back to inadequate information. It is always therefore a very important aspect to consider. However, all six elements are potentially important and they are interrelated, so that a change to one element can have an impact on one of the others. For example, if a piece of equipment is designed well then we will not need to give the operator as much information about how to use it. If the operator has high levels of ability and is well motivated they will also need less information about how to operate the equipment. But if we failed to consider any one of these six, then we could find ourselves coming to the wrong conclusions about what the solution to the problem might be.

However, it is important to remember that every one's individual reaction to all of these factors will be determined to some degree by their cultural background. You therefore need to have a good understanding of who is involved in the problem so that you can take different cultural perspectives into consideration.

These differences can take various forms:

- In some cultures people place more importance on the needs of the social, professional or kinship group to which they belong than on their own individual needs.

- Hierarchies are more important in some cultures than in others, which might mean that people expect to follow orders and show less individual initiative.

- People value clarity of information differently: some people like things to be loosely defined while others like things to be very clearly written out.

Approaches to solving performance problems

When we are first confronted with a problem, what happens? Well, two parts of the brain become involved.

First, a part of the brain called the amygdala leaps into action. This is a part of the brain that deals with emotional responses, which is why our first reaction to any problem is emotional (fear, excitement, anger, anxiety, etc). The amygdala decides what an appropriate response is. For example, if the problem implies physical danger, it will tell us to take immediate action, such as fight or flight.

However, if there is no physical danger it will send a message to the brain's frontal lobe, which is an area responsible for logical thought. This then starts to process information and consider possible solutions. For example, should I buy the red one or the blue one?

The trick, therefore, in effective problem solving and decision-making is to make sure that you allow both parts of your brain to take part, and not to allow the immediate, emotional reaction to dictate your actions.

This blend of emotional and logical responses leads to a number of blocks to problem-solving. These include:

- perception — seeing the problem

- emotional — fear of getting the wrong solution, lack of motivation, etc

- cultural — the importance of tradition, taboos, specific managerial styles, etc

- environmental — comfort or lack of, communication problems, etc

- intellectual — lack of problem-solving skills, information, etc.

With complex problems it is tempting to chip away at the problem by dealing with little bits at a time. This breaking down technique is called reductionism, and while initially appealing, often fails because it does not take into account the relationships between different parts of the overall problem.

To overcome these issues we need to find approaches that allow us to overcome these blocks and tackle whole problems in a rational and logical way.

The General Problem Solving Model

Lying behind the various formal approaches to problem solving is the General Problem Solving Model (the GPSM), a general strategy.

Stage 1: Define the problem

Someone recognises that something is not working properly in some way. They ask questions such as:

- Is there really a problem?

- Whose problem is it?

- Do I want to solve the problem?

Stage 2: Collect the data

We do the research to find out more about the problem.

Stage 3: Explore the problem

We analyse the data and see what the problem now looks like.

Stage 4: Generate ideas

We think about what we can do to resolve the issues uncovered.

Stage 5: Find solutions

We test the ideas and see which are feasible.

Stage 6: Implement solutions

We put solutions into practice and see how they work. Depending on our success we may need to go back to Stage 1 again and start again!

Different techniques

A number of different ways have been developed to put this GPSM into practice. These include:

- Synectics
- K-T (Kepner-Tregoe)
- Systems approaches.

Each of these has its strengths and weaknesses, but the one that is generally thought to be most adaptable to organisational problems is the systems approach, and that is what this course is based on.

The systems approach

A system can be defined as:

" … a group of people, things and/or ideas connected by some common reason or purpose , that is clearly differentiated from its surroundings, and which has attributes or properties that are different from those its members have individually, and the belonging to which alters those members in some way …"

Problem solving in business and management, Michael Hicks

The systems approach was originally developed as a way of dealing with problems that avoided reductionism. It sees the relationships between people, things and ideas as important features of any organised activity.

When using systems approaches it is important to realise that the system we consider is just a mental construction, and does not mean that there is a 'physically observable' system in the real world. We create the system temporarily purely in order to try and understand what is happening, and so that we can compare what could be happening with what is actually going on.

As such, it is the process of designing the system that is actually the most important part of the whole activity. While we puzzle away trying to understand the network of relationships we are developing our understanding of the real world activity and its associated problem(s).

Most importantly, the systems approach helps us to see performance problems **as a process**, something that is happening because of other factors in play. As such, a problem is not a mistake; it is happening because things are making it happen.

We often treat problems as 'states', and think that we can put a sticking plaster over them to make them go away. This may bring short-term improvements, but in the long-term the dynamics of the system will bring the problem back.

What do systems have?

A system can be regarded as having two particular elements:

- a **boundary** that separates it from things that are not part of the system

- a **purpose** that explains why it exists.

In using the systems approach to solve problems we have to work out what both of these are.

Natural and human activity systems

We can describe many different types of system, but there are two of primary interest to us:

- **natural** systems are what we belong to, without our asking, such as our family and community

- **human activity** systems are what we choose to belong to, such as the organisations we work for and clubs or societies.

As a system has a purpose, and it is unlikely that the boundary for each is the same, there will be times when what we need to do as part of our natural system conflicts with what the human activity system we belong to requires of us. Do we go home on time to put the children to bed or stay late and finish that bit of work before tomorrow?

The importance of the analytical process

The techniques covered in this workshop are designed to encourage analytical thought. By forcing you to work through a formal process for looking at a problem you will find that you understand what is happening much more clearly.

Stage 1: Define the problem

You know you have a problem when something doesn't feel right. Expressing just what the problem is can be difficult so to help think about these four elements of a problem definition.

Who:

- Who is the person or group that we are concerned about?
- What specifically are they doing that concerns us?

Where:

- Where do we see this behaviour?

When:

- When did we start to see this behaviour?
- When do we see this behaviour (always, sometimes, etc)?

How big:

- How significant is this behaviour?

How big is crucial. If it's not such a big problem, why spend time trying to fix it?

You may find Tool 9 – Quick and dirty cost-benefit analysis useful here.

An example

Here is an example of a problem statement:

> "The local border guards are the cause of my concern. They are treating women passing across the border badly.
>
> It's always been a problem, and happens most of the time. It's a real problem as there have been some instances of physical assault."

Write it out again

One of the important reasons for writing your problem statement is to improve your understanding of the problem. You can continue to deepen this understanding by trying to rewrite the problem statement in different ways.

Here are some ways to do this.

Paraphrase

Use different words. For example:

> "Government officials are not treating men and women crossing the border in the same way"

Calling the border guards 'government officials' stresses the fact that they have special responsibilities.

Pointing out differences in treatment suggests that the guidelines are inconsistent or being ignored.

Turn the problem around

State the reverse of the problem. For example:

"Local border guards are treating men crossing the border better than they are women."

Broaden the focus

Explore the problem in a wider context. For example:

"Men treating women badly is a common problem."

Redefining problems in this way often creates surprising and stimulating statements that can point directly to fundamental problems.

Writing your problem statements clearly

To help you and other people understand the problem statement, write it as clearly as possible.

Keep the language simple.

State positives: "Border guards are treating women badly" is easier to understand than "Border guards are not treating women well".

Use the active voice: "Border guards are treating women badly" not "Women are being treated badly by border guards".

Stage 2: Collect the data

Having decided that there is a problem and that it is significant, you next need to find out more about it. There are three key things you need to establish at this stage:

- Who is involved?

- What are they doing at the moment?

- What do you want them to be doing?

Who is involved?

There are very few occasions when you will find that just one group of people affect how well a task is carried out. In virtually all cases you will find that several groups of people are involved, directly and indirectly. The first thing you must do when analysing a performance problem, therefore, is to identify each of the groups involved in the performance.

You do this by asking such questions as:

- Who does this job?

- Who do they report to?

- What happens after they have completed the job?

- Where do they get that information from?

- Who makes decisions about that?

What are they doing at the moment?

Keep statements about this as simple as possible. For example, with the problem of the border guards you could find information such as:

- Guards are not complying with the Code of Conduct.

- There are no separate toilet and washroom facilities for men and women.

- There are no women available to carry out body searches of women.

Try to develop as rich a picture as possible of the existing performance.

What do you want them to be doing?

Make sure you establish what the required standards of performance are. If you do not know what these are, you cannot be sure that you have a problem.

Establishing the desired standards will make it easier for you to think about solutions and to then evaluate their effectiveness.

Ways to gather information

There are various ways in which you can go about gathering information.

Quantitative data

It is always very useful to collect information in numerical form. For example, how often something happens, how many mistakes are made each day, levels of customer complaints, etc. Such information is less dependent on personal opinions and comes in very useful if you try to carry out any evaluation.

Ask around to find out where such information is available. IT systems often collect a vast amount of quantitative information about how the systems are being used.

Semi-structured interviews

Talking to people involved in the target groups can provide a lot of information about how they do the job and what problems they find with it. Make sure you talk to:

- the people actually carrying out the activities

- their line managers

- people affected by the activities

- any others that seem relevant.

Conducting effective interviews is a skill that needs practice. People provide more information when they feel relaxed, which happens most easily when you can conduct the interview as if it were a conversation.

This is more likely to happen if you plan your interview and create a loose structure for it. Think about what you need to find out and what questions you will need to ask. Keep a note of these questions in front of you as you conduct the interview so that you can refer to it easily. One way to do this is to write the questions on a Post-it® and stick this to one edge of your notepad.

One danger with relying on interview information is bias that you as the interviewer or the interviewee may have. Interviewees may be reluctant to say something that they feel will show them in a bad light.

To minimise the effects of bias you should **triangulate** your questions. You can do this by asking:

- the same people different questions about the same subject

- different people the same questions about a subject

Comparing answers will identify areas of agreement and inconsistencies.

Questionnaires

Questionnaires are useful for collecting information from a large number of people. However, if the information collected is to be meaningful the questionnaires must be designed and tested very carefully.

Questionnaire design is a complex subject and is beyond the scope of this course, but you can find more information in "*Training needs analysis and evaluation*" by Frances and Roland Bee, published by the Institute of Personnel and Development.

Participating

If the situation allows it, trying to do the performance yourself can provide information about what is:

* easy?

* difficult?

* influencing your performance?

Observing

It can also be useful to watch people carrying out the performance. You must, however, remember that people tend to behave differently when being watched.

This phenomenon is often referred to as the **Hawthorne effect**, after the famous studies carried out in the Hawthorne works of the Western Electric Company in the 1920s and 30s.

Approaches to consider when collecting information

Critical incidents

A critical incident is something that has a significant impact on the organisation. This may be something positive, such as having to meet a new order or deal with a new major customer, or something negative, such as an accident or a downturn in business.

Whatever the nature of the incident, disruption that it causes will provide a lot of useful information about the performances that it affects.

The repertory grid

The repertory grid is a useful technique for gathering information about complex performances, such as in managerial positions. You as the analyst will work with someone who knows the performance of the target group well, such as a line manager.

This person identifies three people from the group who perform well, three whose performance is average and three whose performance is below average. You then write their names on separate cards and place them in a 3 x 3 grid in front of you.

Choose three cards at random and ask the manager to select two of the people whose performance is similar. Then ask what is different about the performance of the third person. Make a note of this, then choose another three cards and repeat this questioning.

Repeat this until you cannot find any new information. This technique makes it easier for someone to identify subtle differences in behaviour that are affecting a performance.

Useful materials

You will find the following tools in the toolkit useful:

* Tool 8 – Information collection methods

Stage 3: Explore the problem

At this stage we look at the information we have gathered and try to make some sense out of it.

There are various tools we can use. Which we decide on depends on the nature of the problem.

It helps to remember that there are two different elements to any problem:

- **structural elements**, the people, teams or organisations that play a part and that change only slowly
- **processes and procedures**, the relationships that bind the structural elements together.

Getting to grips with complex situations

If the problem you are working on is complicated, there can be a lot of information to take into consideration. Identifying structural elements and processes and procedures may therefore be difficult. If this is the case a good starting point may be to draw a **rich picture**.

Rich pictures are cartoon-like representations of what is going on. They work well because our unconscious minds can process imagery more easily than they can deal with words. They also make it much easier to show relationships and processes.

Here is a simple rich picture that could have been developed to capture some of the information about the border problem.
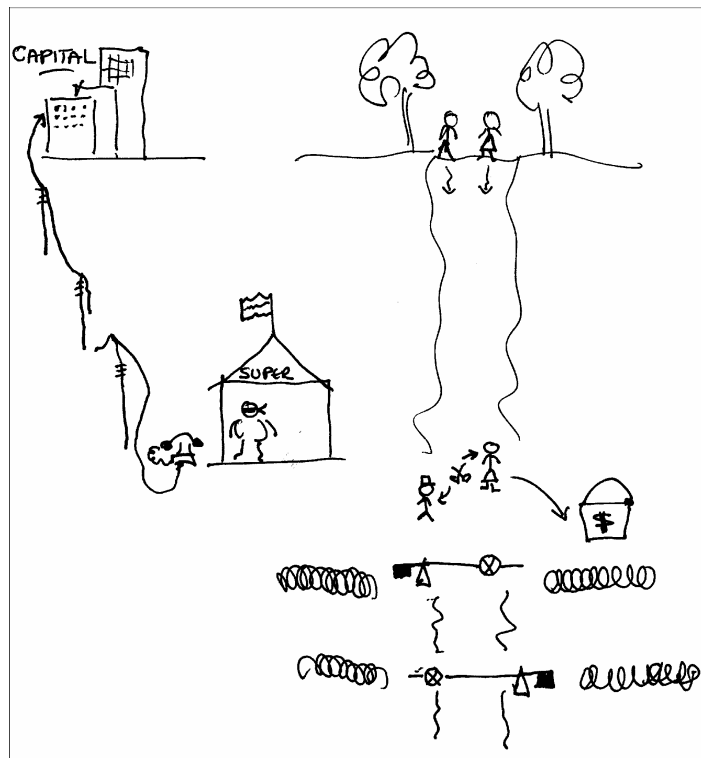
Such pictures include symbols, keywords, cartoons, etc. Use colour to brighten them up and to show things more clearly.

Include both factual and subjective information.

To get started on your rich picture:

- Draw the elements of the situation first (people, hierarchy, departments, etc)

- Add information about processes.

- Indicate connections and relationships between the elements and the processes.

While you are drawing, make a note about any relevant thoughts that occur to you ("Why does that happen?", "Is that really the case?", etc). Remember that the process of describing the system is as important as your final description.

When you have drawn your rich picture look to see what it shows. Where are the connections? Are there any elements that are not connected in some way?

Identifying the structural elements

System diagrams

Whether or not you develop a rich picture, you must develop a clear understanding about who is involved in the problem. A simple way to do this is by drawing a system diagram.
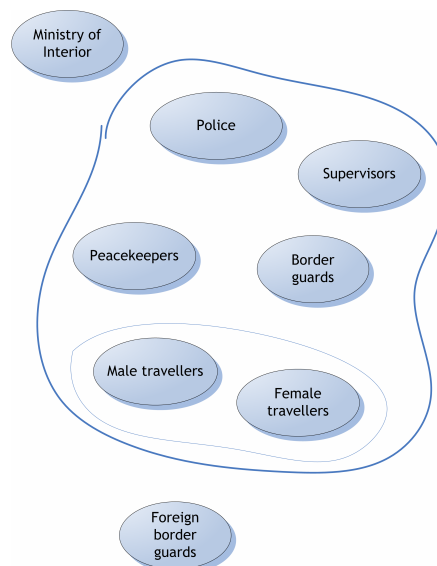
Here is a potential system diagram of what is happening at the border. The six groups within the main loop represent those people who have a major part to play in what happens.

Where to draw the loop is your decision, and deciding whether or not to include somebody is an important part of the problem-solving process. For example:

- Should the Ministry of Interior be inside or outside?

- What does placing it outside mean?

- Does this mean that its role is limited?

- Should it have a greater role?

What about the foreign border guards? They are under a different jurisdiction but what happens at the border affects them as well.

Again, it is the process of developing a system diagram that is more important than the accuracy of the finished product.

Influence diagrams

Influence diagrams are a development of a system diagram, although you may decide to immediately create an influence diagram rather than go through the first stage.

The enhancement here is that you draw arrows connecting the different groups, indicating both the direction and strength of influencing:

- Arrow direction indicates direction of influence.

- Line thickness indicates strength of influence.
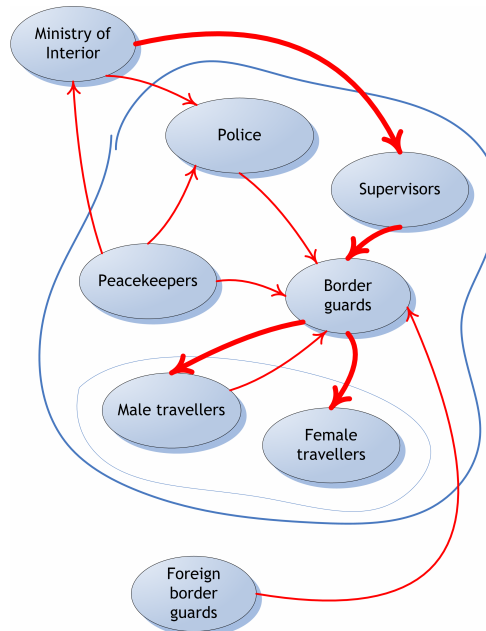
As you are drawing this, think about what it represents:

- Should one group have more or less influence?

- Should influence go two ways?

Such diagrams can help you to see where the focus of your intervention should be. For example, if the guards' supervisors do have a strong influence, then they should be targeted for any remedial actions.

Also, you may decide that some action should be taken to strengthen or reduce the influence that one group has over another.

Understanding the people involved

Knowing the **characteristics of the learners** - their background and culture, motivation, experiences, current or future job characteristics, recent training, literacy/languages, age, gender, total number and so forth - helps you direct learning solutions to the appropriate level.

Knowing the **physical and social environment of the work situation** - duty station or other, size, location and security conditions, range of activities and services offered, set-up department/team, management and referral systems and so forth - helps you tailor solutions to the real-life conditions of the work situation of the learners.

Knowing the **available resources, requirements and constraints** (both on a organizational and work situation level) - time and budget, restrictions for approval, requirements for entrance and certification and so forth – helps you develop solutions that meet the requirements and can be implemented.

Here is what you can do to find out about the people involved:

Find out about the learners.

Sources of information include: data and information from the Staff Development Section of the Country Operations Plan and/or an electronic Performance Appraisal Document (e-PAD), location and/or duty station visits and observations (or written reports of these), interviews with stakeholders, managers/supervisors and a representative group of learners.

Some of the important characteristics of learners to consider in designing a learning solution are:

- Background and culture of the target learner group. UNHCR staff and its implementing partners are from many different cultures which makes it important to recognize cultural diversity. Cultures can differ in many ways:

    o attitudes to authority – some people like there to be clear hierarchies and leadership, while others prefer more consensual decision-making

    o individualism – this is important in some cultures while in others good relationships with other people are a priority, so individualised learning may be less attractive

    o clarity – some cultures like things to be very clearly defined while in others general principles are preferred so that people can show their individual abilities.

    How would these elements and background affect the chosen approach for a learning solution?

- Motivation of the learners. You can see motivation as a driving energy for catalyzing behaviour. Do they like learning? What motivates them to learn? (e.g. personal satisfaction at doing a better job, helping people in their professional or personal community, spending time with others in similar jobs, certification, time away from the job). What do they dislike about learning? (e.g. feeling like it is a waste of time, taking tests, time away from the job, feeling like they already know the job). Cultural differences will make a difference to what motivators are.

- Educational background and work experience. What is the highest level of formal education? What kind of work experiences do the target learners have?

- Job title and description (Protection Officer, Admin Officer, Border Official, School teacher and so on), job characteristics and the role of the target group who perform the job tasks related to the performance gap.

- (Computer) Literacy and languages. Do learners have access to and use computers and internet? What languages do they speak and/or write?

- Age and gender. Age and gender have impact on the approach of the learning solution. What is the compilation of the target learner group?

- Previous learning experiences. How do the learners learn best? How do they like to learn (preferred learning style or approach)? How do they approach a new or difficult task?

Find out about the work situation.

Some of the most important characteristics of the work situation to identify are:

- Where do the target learners work? (duty station, camp, HQ or other, size) Under what circumstances do they work? (security and safety conditions on the location) What range of activities and services are offered? How are the facilities staffed? What equipment and supplies are available?

- What resources (reference documents, standards and guidelines etc.) are available on the job and are they up-to-date?

- How is the department/team organized? How is supervision and support for learning organized? How does the performance management system work?

- Are learning activities held on location, or could they be? (e.g. group training, on-the-job-learning) Are the learners on the same physical location?

- What is the workload like? Is there an emergency situation or one expected?

- Are there supply problems with essential equipment? How is communication and internet accessibility?

Useful materials

You will find the following tools in the toolkit useful:

- Tool 4 – Questions to ask in Step 2

- Tool 5 – Learner characteristics worksheet

- Tool 6 – Work situation characteristics worksheet

- Tool 7 – Resources and requirements worksheet

Identifying the processes and procedures

Multiple cause diagramming

Multiple cause diagramming is a technique that you can use on your own or with groups of people. It is similar to the idea of the 'fish bone' or Ishikawa method.

To do it:

- Start with the problem statement.

- Ask "Why is this happening?".

- For each answer (and you may come up with several), ask the question "Why?" again.

Do this repeatedly to build up a picture of the different factors that are influencing the performance.

It can sometimes be difficult to get started in this analysis, and so it is useful to remember the four factors influencing performance; knowledge, skill, motivation and environment.

See how this works in this example.

Problem statement: "This department reduces reports that are difficult to understand, so that they often have to be rewritten."

First, take a large sheet of paper and write what the problem is in the middle. Then write the words *Knowledge*, *Skill*, *Motivation* and *Environment* as shown. These anchors will help to stimulate your initial thoughts so that you can get going easily.
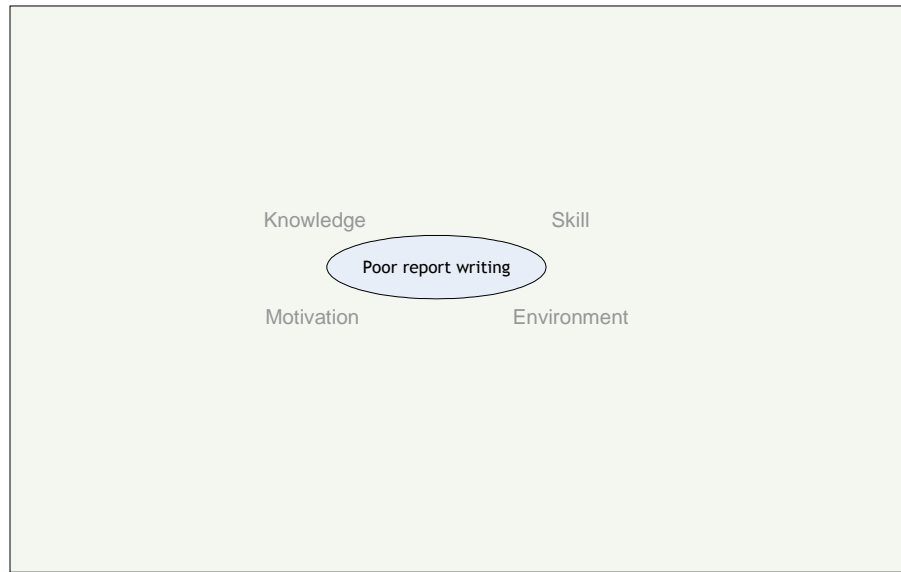
Now think about the knowledge aspects of report writing, and ask, "Why is report writing poor?". Write an idea down. Then ask "Why is that so?". Write that down. Keep repeating this, "Why...? Why ...? Why ...?" questioning so that you build up a chain like this:
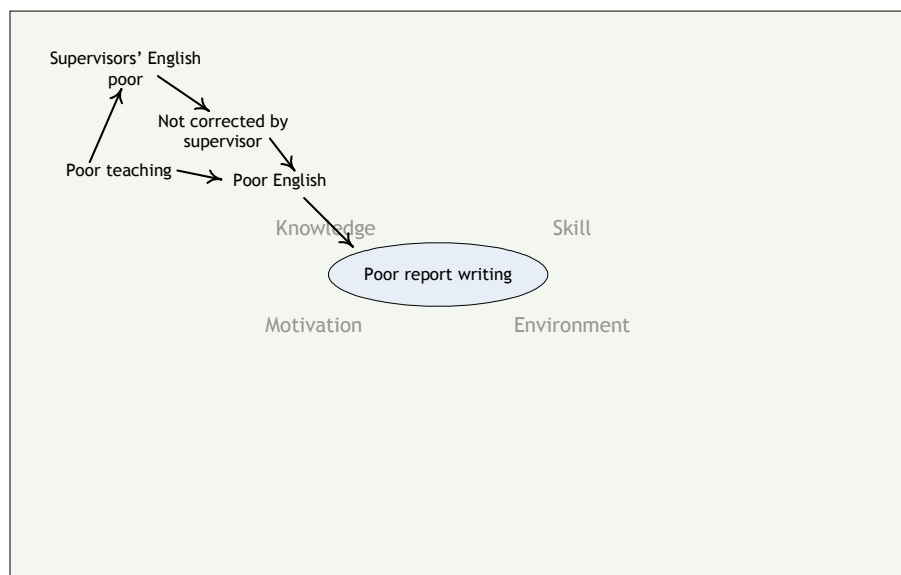
Repeat this for the other anchors. By now the thoughts will be flowing thick and fast, and you will probably be moving from one anchor to another. You might end up with something like this:
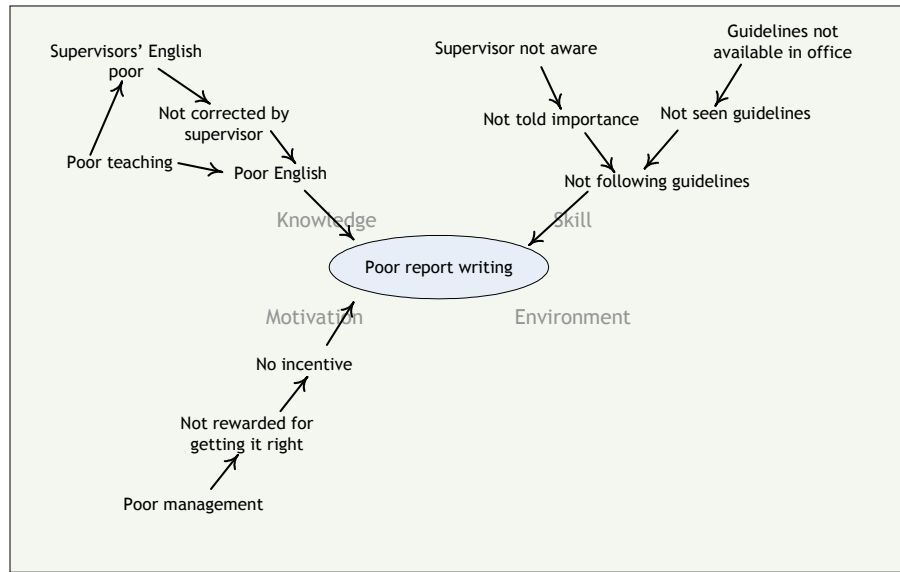
There are some points to look out for:

- **Vicious circles**: you may find that one cause appears more than once in the same chain. This is therefore creating a vicious circle, where the cause feeds on itself to reduce the performance.
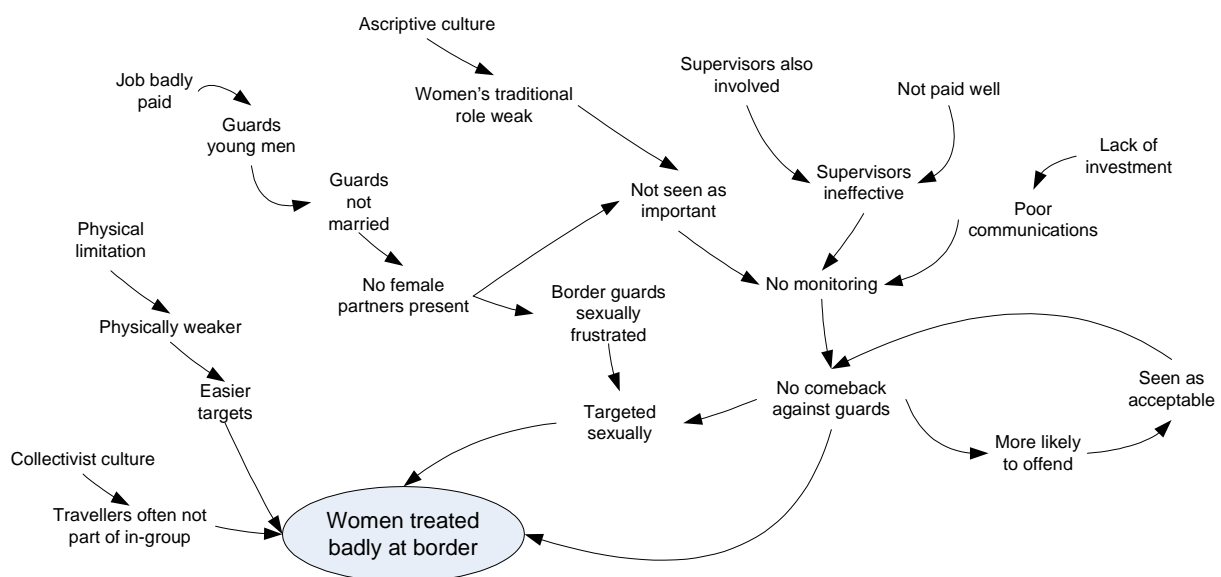
- **Repeated causes**: some causes may keep coming up - these are key problems you need to consider. In this example, poor English appears twice.

Here is a multiple cause diagram for the border guard problem. You can see a circle in the lower right corner, which you can consider further using a sign graph.

Sign graphs (causal flow diagrams)

A vicious circle is an example of a feedback loop, a situation where a series of actions feed on each other. Sometimes they make things worse, but sometimes they make things better (a virtuous circle).

It is sometimes useful to explore feedback loops in more detail, and for this you can refine the multiple cause principle to produce a sign graph (sometimes called causal flow diagrams).

In his book, *The Thinker's Toolkit*, Morgan Jones, a former CIA analyst, uses sign graphs to explore what happened in Somalia in the 1980s.
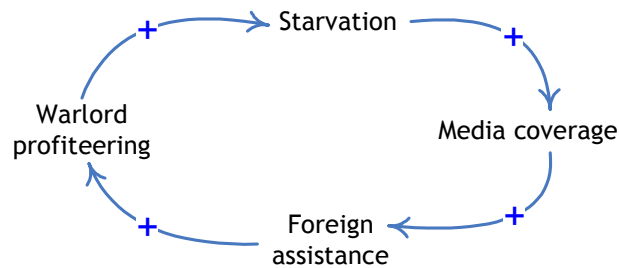
Here, the arrows are given plus or minus signs to indicate the nature of the effect:

- A '+' sign means that there is a direct relationship (when one factor goes up, the other goes up as well, or vice versa)

- A '-' means there is an inverse relationship, so that as one goes up the other goes down.

So as starvation increases, media coverage increases and so on. Look at what this implies: that each factor makes the next factor worse, so the overall result is for starvation to get worse and the feedback loop starts to spiral out of control.
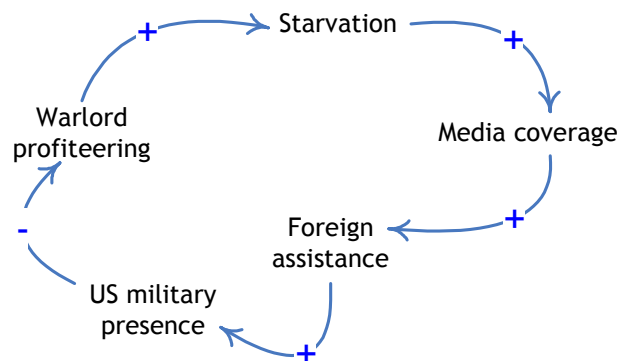
What happens when we introduce another factor, a US military presence?

The military presence has a negative effect on warlord profiteering: as the presence increases the profiteering goes down (as shown by the '-' sign). This means that the starvation goes down, the media coverage decreases, foreign assistance decreases, a smaller military presence is needed but then profiteering increases.

This reverses the trends within the cycle, leading to an increase in starvation, etc.

The loop therefore oscillates backwards and forwards, between starvation and sufficiency. There is also an optimum level of military presence where this is a more or less stable feedback loop.

In general, any feedback loop where there are only positive connections or an even number of negative connections will be unstable.

If there are an odd number of negative connections, the loop can be stable.

Multiple cause diagrams and sign graphs can be very powerful ways of gaining insights into what is going on in a situation. However, do not think that it is necessary to construct detailed models of everything that is happening: it is the thinking process that is important.

They can help you to identify and think about relationships that may not have been very obvious. It is often useful to ask several people to construct their own diagrams and to then compare the results. The differences are as important as the similarities.

Process flowcharts

Flowcharts are a very useful way of graphically representing processes and procedures.

You can use them in various ways:

- Work with people involved in the problem to develop a flowchart. The process may improve their thinking and their performance.

- Show people a flowchart of what you think should happen. See how it compares with reality.

- Ask different people to produce a flowchart. See what the similarities and differences are.
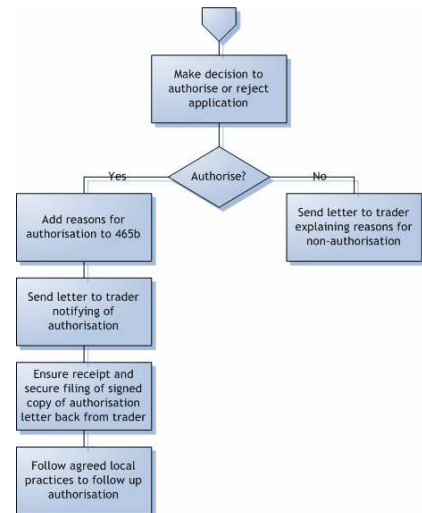
Process flow diagrams

Process flow diagrams are a particular type of flowchart.
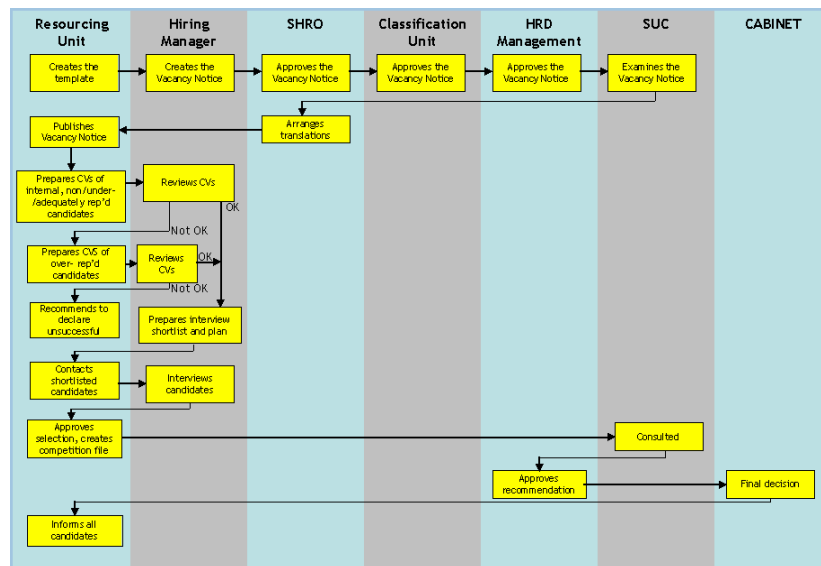
This example shows a process flow diagram for a recruitment process. The vertical columns are the different departments involved in the process, and the diagram shows how the recruitment moves from department to department.

You can use these in much the same way as process flowcharts.

Stage 4: Generate ideas

In Stage 3 you explored the problem and during the process of this you will have developed a much clearer understanding about what is happening.

In this next stage you think about what solutions there might be to the problem. Note that you may have thought of some potential solutions along the way, and you can add them to your list here.

There are three ways described here for coming up with ideas:

- brainstorming, a random but potentially very effective way of developing new ideas

- the performance flowchart, a systematic way of looking at the problem to identify appropriate solutions for each type of issue

- force field analysis, another systematic way where you consider competing forces.

You can, of course, use either or each method, and compare results.

Brainstorming

Brainstorming is often used to find solutions to performance problems, as you can involve people involved in the various target groups in the process. This should mean that they develop a sense of ownership of solutions that arise.

Here are some guidelines for running a problem-solving brainstorming session:

- The best number of people to involve is about 12.

- Aim for participants from a range of backgrounds.

- Try to have two facilitators, one to write words down and the other to prompt discussion.

- If any of the participants have never taken part in a brainstorming session before, send them some information beforehand so that they know what to expect.

- Hold the session somewhere comfortable. Formal table and chair arrangements usually inhibit relaxation and creativity, so try to find somewhere with soft chairs that can be arranged informally.

- Make the rules of the brainstorming session clear to everyone.

- Never start your serious brainstorming session from cold. Always have a warm-up session to get people loosened up. Topics for this section could be such things as useless ideas or pet hates.

- Continue accepting ideas until the slump comes, when people run out of ideas. When this happens, you can often get things going again by suggesting a 'wildest idea competition'.

> **Rules of brainstorming**
>
> Do not criticise any ideas until evaluation starts.
>
> The wilder the idea, the better.
>
> Quantity is important.
>
> Adapt and build on other people's ideas.

- People will often come up with new ideas in the hours after the brainstorming session. It is therefore a good idea to give them a means of adding more ideas to your list the next day. You can do this by giving each of the participants a list of the ideas already generated, and asking them to add any new ideas to the list and to send it back to you.

Performance analysis flowchart

The performance analysis flowchart developed by Mager and Pipe is a systematic way of reviewing information and identifying potential solutions. It is particularly useful for distinguishing between training and non-training solutions.

```
                    Start

              Is the problem        No      Do nothing now
                serious?                      but monitor

                  Yes

              Lack of               No ────────────────────────────────┐
           knowledge or                                                │
              skill?                                                    │
                                                       Punished    Yes   Remove
                  Yes                                  for doing         punishment
                                                       it well?
            Can task be      Yes    Simplify, provide
            simplified?             extra support,
                                    performance              Rewarded for  Yes   Remove
                                    aids                     doing it poorly?    reward
                  No

              Did they      Yes
            used to do it
             correctly?            Do they do it           Doing it well   No    Make it important
                                    often now?             important?

                  No              No        Yes

                              Provide practice  Provide    Environmental   Yes   Remove
              No              and feedback      feedback   obstacles?            obstacles

            Can people be   Yes    Provide training                        No
              trained?

                  No                                        Select solutions

            Do task another
                way
```

Adapted from the work of Mager & Pipe

Force field analysis

This is an approach developed by Kurt Lewin, who proposed that any given situation can be seen as a state of equilibrium. That equilibrium is maintained by:

• **pushing** forces, that want to move the equilibrium

• **restraining** forces that want to keep it where it is.

In force field analysis you seek to identify the pushing and restraining forces, so that you can see how to change their direction or magnitude.

The first step is to compile a list of the forces that would push the present situation in the direction you want. Consider the example of poor report writing. In this case, the pushing forces may include:

- pressure from other departments to raise your standards

- your embarrassment at the poor quality

- time wasted due to re-writing reports

- your staff's pride in doing a good job

The restraining forces may include:

- poor levels of English

- time pressures for writing and checking

- inadequate quality control procedures

- unclear expectations about quality

Then, for each list, you must decide whether each force has a high, medium or low magnitude. When you have done that you can draw your force field diagram. It would look something like this:
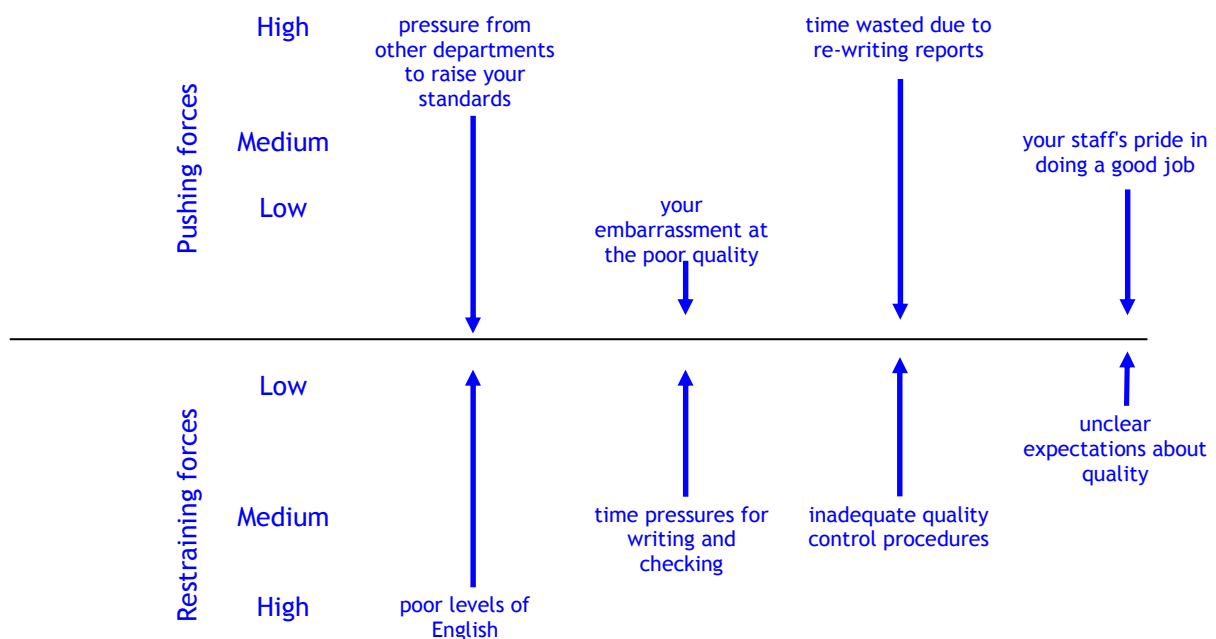
What you have to do now is to propose ways to:

- maintain pushing forces but reduce some of the restraining forces

- add new pushing forces

- make restraining forces point at something else

- remove any pushing forces that are creating restraining forces.

Whatever you do, you should remember that:

- increasing a pushing force often creates a restraining force to oppose it

- change is harder to implement if it involves something that causes effort or disruption.

For example:

- Increasing pressure from other departments is likely to produce resentment in your department, a restraining force.

- Adding new quality control procedures may be hard to implement.

- Taking steps to increase your staff's pride in their work would increase the pushing force without any increase in restraining forces.

- Allocating more time for report writing would move the time pressures in another direction.

Stage 5: Find solutions

Deciding on the blend of solutions

If you decide that a training solution is required to close the performance gap, you will need to choose between the various forms of training available.

When trying to make a decision about these options, you may find this flowchart useful:
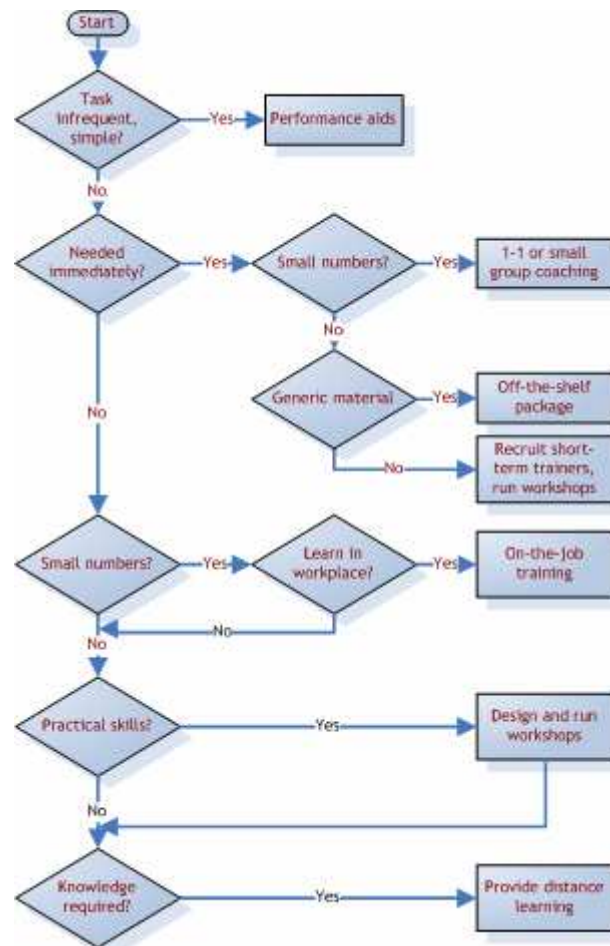
This table summarises the main training media and their strengths and weaknesses.

Medium	Strengths	Weaknesses	Approximate costs
1-to-1, small group coaching	Close contact between trainer and learner Meet specific needs Flexible timing	Dependent on quality of coaching Accreditation difficult Commitment of time by learner and coach may be difficult May need to teach the coach coaching skills	0 – $2,000 (if a paid coach) May be repeated opportunity costs for time needed by on-the-job coache
Generic training courses	May be cost-effective for larger numbers of learners External accreditation	May not be exactly what is needed Can be expensive	$2,500 – $6,000

	Can provide expertise unavailable internally	Probably needs follow-up to be effective	
Performance aids	Highly cost-effective Permanently available	Less effective for complex tasks	0
On-the-job training	Close to the real performance Integrates learning with performance Flexible timing Builds relationships	Potentially dangerous/risky to customers, equipment, etc. Commitment of time by learner and coach may be difficult May need to teach the coach coaching skills	0 (but may be repeated opportunity costs for time needed by on-the-job coaches)
Workshops	Opportunities to practice real skills Allows concentration on the learning Collaborative and helps with relationship-building Flexible learning delivery styles	Expensive Difficult to co-ordinate May be difficult to relate workshop to actual performance Probably needs follow-up to be effective	Dependent on logistics (up to $60,000 for 25 participants with two facilitators with international travel, $6,000 for national travel only)
Distance learning	Cost-effective for larger numbers of learners Consistent quality of training Variety of delivery options available Good where training have to be repeated often Flexible to meet needs of different levels of learner	Higher initial cost Quality dependent on strength of design Less effective for skill-based subjects Can be expensive to update	

Under the general heading of distance learning come a large number of possibilities. Again each have their particular advantages and disadvantages.

Medium	Strengths	Weaknesses	Cost
Paper-based	Relatively cheap to design and develop Flexible delivery Portable for the learner Easy to reach large numbers	Difficult to offer skills-based training Difficult to assess impact on performance Application to performance may be limited	$8,000 – 15,000 (to develop) $5 – 30 (per person to buy)
E-learning	Can be stimulating and motivating to learners Various presentation options available, such as tutorials, simulations and games Allows centralised recording and monitoring of training	Expensive to develop, especially if incorporating multimedia Reliant on suitable delivery computers Learners can find it lonely and/or frustrating Web-based delivery needs	Minimum of $10,000 per hour of material, dependent on complexity

	Potentially economical for large numbers	intranet or Internet access	
	Effectiveness dependent on sound design	Bandwidth may limit use of multimedia	
		Reliant on access to a computer	
Web-based conferencing technologies	Allows integration of tutor support with flexibility of delivery	Learner participation may be difficult to ensure	Internal facilitation, $0
	Cheap to design, develop and deliver	Bandwidth may be a problem	External facilitation ($200/hour for 20 hours), $4,000
	Can reach multiple locations simultaneously	Needs computers with intranet or Internet connectivity	
		Time differences	
Video	Good for demonstrating desired behaviours	Passive	$5,000 (purchased) $20,000 (developed)
Audio (CD or podcast)	Flexible delivery options (even in the car)	Passive Poor retention	0 – $30 per participant

Selecting the solutions

Once you have generated ideas about how to solve the problem you may need to select certain ones to implement. It is not a good idea to try to implement all possible solutions, as they may interact with each other and it will certainly be difficult to decide which have proved to be successful or otherwise.

So select just one or two ideas at most to implement at any one time.

There are several ideas given below about how you can decide which of a number of ideas to implement.

Paired ranking

Paired ranking is a highly ordered way of comparing a number of different possibilities, and allows you to minimise subjective comparisons.

Suppose you have four options, A to D. First compare options A and B; which is better? If you think that B is better, mark it like this:

Option A
Option B |
Option C
Option D

Write down your rationale for the selection; this minimises the chance that you will do it based on a vague preference.

Repeat this for A against C. If A is better, your list will now look like this:

Option A |
Option B |
Option C
Option D

Again, write down your rationale.

Repeat this for each pair of options, and when you have done this you will have a list something like:

```
Option A    ||
Option B    |||
Option C    |
Option D
```

Pair ranking is effective because it forces you to compare just two items at a time.

If you want to compare a number of options against different criteria, you can use pair ranking for each separate criterion. You may need to give each criterion a different overall weighting, and you then:

- multiply the scores for each option by the relative weight for that criterion

- add up the criterion scores for each option

- see which option has the highest overall score.

Nominal group technique

This is a good way to use the power of a group to vote for different solutions. This method of voting allows you to do it in a way that avoids having certain individuals dominate the process.

You need:

- paper to write on for everyone

- flipchart.

1. Write a list of the possible solutions on the flipchart, and against each write a letter of the alphabet so that they are all uniquely identified.

2. Ask everyone to choose the five (or fewer, if necessary) solutions they think most useful and to write their letters on their paper.

3. Now ask people to rank them, 5 points for the best, 4 for the next best and so on.

4. Go around the room, asking people to say what they have voted for. Write the scores against each idea.

E	3
F	1
K	5
H	2
P	4

5. Add up the scores for each. You will have a ranked list of the solutions considered most useful.

Pros-cons-fixes

This method allows you to think carefully about the advantages and disadvantages of each particular solution.

Get a sheet of paper for each solution you want to consider. For each solution:

1. Write a list of the pros.

2. Write a list of the cons.

3. Review the cons and cross out any that are repeated or are similar.

4. Identify any ways in which the cons can be eliminated or reduced.

When you have done this for each solution, compare the pros and unalterable cons. Choose the one or two solutions that come out as having the most pros and least cons.

Stage 6: Implement solutions

Once you have completed your training needs analysis any training solutions identified can be developed and then implemented.

However, remember that training needs analysis does not end there. You need to evaluate the success of your solutions, to see whether or not they do result in improved performance in the way that you want.

If you have been successful, congratulations. But keep monitoring the situation. Changes often bring temporary improvements in performance, regardless of what is changed, and the only real success is long-term improvement. Even so, remember that performance will naturally decline as the weeks and months go by without adequate management.

If the problem has not been resolved, think again about your analysis. Are there other solutions that you can try? Is there anything you need to consider more carefully?

In fact, the only thing that you can say for certain about problem-solving is that it is a never-ending process!