Topic 2

Reporting Information

Contents

Learning Objectives

- *Appreciation of the importance of the receiver of a communication*
- *Awareness of the need to support statements by citing reputable sources*
- *Familiarity with the structure of a written document*
- *Familiarity with the structure and media used in a spoken presentation*

Poets utter great and wise things which they do not themselves understand. (Plato 429-347 BC)

2.1 Communicating ideas

Communication is a funny thing. Even the way the word is used in English is misleading. It suggests something that we do to people rather than for them. ”I communicate to you”, ”Jack communicates with Jill” but when ”somebody communicates for another person” the word takes on a completely different meaning. Yet communication, in practice, is all about the people for whom the message is intended.

The receiver of communication is king.

This should be your guiding light when producing any form of communication. If the reader, listener or viewer does not comprehend what the transmitter is trying to convey then the communication is pointless and the transmitter has failed. When you write, speak or demonstrate something for somebody else to digest the responsibility for ensuring that they absorb it successfully lies entirely with you. Blaming your audience for not understanding is not an option, ever.

You might think the previous two paragraphs have been stating the obvious - most people would. However an awful lot of people, whilst accepting the validity of the above, actually do nothing about it. If the receiver of a communication is king then you must show deference to your audience. Your communications must be produced with a particular audience in mind. If your report is too technical it might leave your readers with a headache, if your speech is not sufficiently detailed it is likely to be drowned out by the sound of your audience snoring, and shouting it won’t help.

”Too technical”? ”Sufficiently detailed”? How do you gauge these intangible qualities? Largely through experience but also, and always, by knowing your audience. This doesn’t simply mean knowing the technical competencies of your audience; those things which you can expect them to have the background to understand and those things which you cannot. It also means knowing why they have chosen to become your audience; knowing what it is they are hoping to learn from you. This might mean facing up to the unpleasant possibility that it isn’t what you want to tell them about.

It is for this reason that any communication to a mass audience should commence by explaining what is going to be addressed and why. Few people forget to include the ”what” in their communications but the ”why” is more frequently overlooked. This, though, is the place where you can persuade that part of your audience who had hoped you would be telling them about something else of the relevance to them of what you are actually going to address.

2.2 Organising your thoughts

What are you trying to say? You must get this clear in your own mind before you even begin to think about putting it across to others. Do you have a single message or are there a number of points you wish to convey?

Even if you have just one ”Big Idea” or key conclusion to communicate you will also have a number of building blocks or stepping stones that led you to it. You need to organise these into an intelligible order for your audience so that they can follow your line of argument. Don’t overwhelm your audience with more detail than they need but don’t frustrate them by leaving gaps in your reasoning which it would be unreasonable to expect them to fill for themselves.

If you have a portfolio of ideas to convey think about the order in which you deliver them. Will some orderings be easier on your audience than others? Perhaps some of the ideas are more related than others and so should be presented together. Perhaps some lead onto others. Maybe there is a chronological order to them. If you can find no logical ordering then at least present your ideas alphabetically - any ordering is better than none at all. Remember also that your audience will probably need to be led into each idea in the portfolio just as with the ”Big Idea”.

When organising your material it can help to jot down section titles and sub-titles. This hierarchical top-down approach will probably seem very logical and intelligible to you. Beware though - you know what you are trying to say. Your audience does not. The drawback of this approach is that it can leave your audience with a lot of loose ends at the bottom of the branches. You will need to explicitly, and carefully, draw all these loose ends together in a concluding section if you adopt this approach.

Once you have organised your ideas you should be in a good position to decide how to introduce your communication at the start and summarise it at the end. Remember that every communication has three essential parts -

1. Introduction (tell your audience what you are going to say and why)
2. Body (say it)
3. Conclusion (tell them what you’ve said and remind them why)

2.3 Supporting your statements

Consider the following two statements -

Statement A : *The world is flat.*

Statement B : *The world is round.*

What is the difference between them? You might say ”Statement A is false and Statement B is true” and expect that to be sufficient explanation. Suppose you were talking to a young child though. You might (indeed should, if you have any experience of young children!) expect the child to reply ”Why?”. If you are going to satisfy the child’s curiosity you will have to support your statement. Perhaps by citing evidence in favour

of Statement B, perhaps by citing evidence that refutes Statement A. Your success in this will depend on how convincing your evidence is - to the child, not to you.

Your evidence might be empirical (”I’ve flown around the world and I can tell you from personal experience that it is round”). It might be a theoretical proof (”Here are the astrophysical calculations and you can see that the world has to be round in order to orbit the sun in the way it does”). Finally, because you just don’t have time to carry out all of the practical experiments or theoretical proofs yourself, you might, and frequently will, want to cite a source which your audience accepts is authoritative. Sadly, young children accept very few sources as authoritative! Why?

Obviously, just as you and your audience can agree on certain sources as being authoritative, so too can you agree on certain statements being common knowledge and not needing justification. You have to form a judgement about what your audience will accept when preparing your communication. Does a statement need to be justified to this audience or will they be content to it as read? If your assessment of your audience is wrong you will either leave them crying ”Why?” like the child or you will bore them with justifications of things they consider obvious.

Sir Isaac Newton once said that he was ”standing on the shoulders of giants”. We are all standing on the shoulders of giants of course and you should take every opportunity to cite the work of others in support of your own arguments. Supporting your statements, more often than not, means referencing the work of others. It is essential when doing this that you provide sufficient detail for your audience to retrieve the work you have cited and read it for themselves. It is also essential that you respect the intellectual property of others and give them credit when you quote them. Cutting and pasting somebody else’s work and passing it off as your own is not just plagiarism, it is theft. Theft of their intellectual property.

The three most common forms of work that you are likely to reference are books, journals and web pages. A usable reference to any of these forms requires at least the following -

- Title of book or article
- Author’s name
- Year of publication

For a book the name of the publisher should also be provided. For a journal paper the journal name, volume and page numbers should be included. For electronic media a URL should be given (http://..., etc.) and the date you accessed the material (the citation date) might help your audience to track it down if the URL is no longer valid or the content has been changed. The format of the resource is also recommended.

Here are some examples -

Book

Epstein, R.G., 1997, *The Case of the Killer Robot.* John Wiley & Son.

Journal paper

Turing, A.M., 1950, ”Computing Machinery and Intelligence”. *Mind*, **59**, pp. 433-460.

Web page

Taylor, N.K., 2002, *The Killer Robot* [online]. Heriot-Watt University (MACS), 16th December 2002 [cited 7th July 2003]. SHTML. Available from:

http://www.macs.hw.ac.uk/~nkt/praxis/epstein/index.sht

2.4 Writing reports

If you have organised your thoughts well then the following ten Laws of Good Report Writing (IEE 1999) are all you need -

1. The reader is the most important person.
2. Keep the report as short as possible.
3. Organise for the convenience of the report user.
4. All references should be correct in all details.
5. The writing should be accurate, concise and unobtrusive.
6. The right diagram with the right labels should be in the right place for the reader.
7. Summaries give the whole picture, in miniature.
8. Reports should be checked for technical errors, typing errors and inconsistency.
9. The report should look as good as it is.
10. The reader is the most important person.

Once you have organised your material and deployed your references to support your reasoning the key is to be succinct. Don't waffle or waste space explaining the obvious and use diagrams, images, graphs and tables wherever they sum things up more concisely than words. Keep your sentences short because technical sentences with even only a couple of sub-clauses can be difficult to follow.

Use chapters, sections, sub-sections and paragraphs to break your work up into manageable blocks. Summarise chapters, and possibly sections, at their ends to reinforce the key points for the reader.

Take advantage of computer aids to check the spelling and grammar of your work. Remember the three parts of a communication and make sure that your introduction tells your audience what you are going to cover and why and that your conclusion tells them what you did cover and why. Finally, remember that the receiver of communication is king.

2.5 Making presentations

A spoken presentation is a performance. You might not wish it to be, you might feel that your talk is far too serious or important for you to worry about how you look or sound. However unfortunate you may think it is, these things matter. When you stand in front of an audience and expect them to look at and listen to you then you must consider what they can (or cannot) see and what they can (or cannot) hear. There's something of a contract here. The audience agree to pay attention and not interrupt you unnecessarily for as long as you provide them with sights and sounds that please them, or at least don't annoy them.

Dress presentably, stand up straight (hands out of pockets), look at the audience, make sure your visual aids are clear to those at the back and you'll meet the sight requirement of the contract. Speak clearly and enthusiastically at a reasonable speed with sufficient volume for those at the back and an appropriate level of formality/familiarity and you'll satisfy the sound requirement too.

Remember that the reason we use presentations is that they permit interaction. If you aren't prepared to engage in interaction you might as well write down what you have to say and stay away. Having said that, you shouldn't encourage a lot of interjections. Whilst questions during a talk can help you to decide how much explanation is needed they will disrupt your flow and can result in a poorer experience for the rest of the audience. Always leave time at the end for questions and encourage the audience to save their questions until then.

Nowadays presentations are invariably accompanied by the projection of words and images onto screens. When using words you can use different colours and fonts to introduce variety but don't overdo it. Remember that such devices can make reading more difficult and distract your audience from the message you are trying to get across. Make sure your font sizes are large enough and don't cram too much text onto your slides. These are incredibly common mistakes. Another common mistake is to present diagrams and graphs in which the labels are too small to read. Remember to think of your audience as you prepare your materials.

Think about where you position yourself. Don't obscure your visual aids or muffle your voice through bad positioning. If you cannot avoid obscuring a screen for some of the audience move around during your presentation so they all get a chance to see it. Make eye contact with your audience and speak to them - not the screen, the projector or your feet. Remember the three parts of a communication and tell your audience what you are going to cover at the start and why and what you did cover at the end and why. Don't forget to introduce yourself (and your affiliation if appropriate) at the beginning and remember that the receiver of communication is king.

2.6 End of topic test

Q1: Which of the following is NOT an essential part of every communication -

a) Abstract
b) Body
c) Conclusion

d) Introduction

Q2: A drawback of the top-down approach to organising a communication is -

a) Bottom-up
b) Branches
c) Loose ends
d) Sub-sections

Q3: Who said he was standing on the shoulders of giants -

a) Charles Babbage
b) Albert Einstein
c) Isaac Newton
d) Alan Turing

Q4: Which of the following does a journal reference NOT need -

a) Author
b) Page numbers
c) Publisher
d) Volume

Q5: Plagiarism was described as -

a) Bad mannered
b) Inconsiderate
c) Lazy
d) Theft

Q6: In the ten Laws of Good Report Writing which two were the same -

a) 1 and 2
b) 1 and 5
c) 1 and 10
d) 2 and 5

Q7: Sentences in written reports should be -

a) Interesting
b) Short
c) Single phrases
d) Technical

Q8: Presentations nowadays invariably use -

a) Jokes
b) Microphones
c) Projections
d) Videos

Q9: Which of the following was NOT cited as a common presentation mistake -

a) Diagram labels
b) Font colour

c) Font size
d) Font variety

Q10: The receiver of communication is -

a) Aerial
b) King
c) Listener
d) Reader

2.7 Assigned task

1. Read ”The Case of the Killer Robot” Background material and Article 1 (Epstein 1997 or Taylor 2002) before embarking on Topic 3.
2. Each member of your tutorial group is to research a different topic from the list below. They all relate to ”The Case of the Killer Robot” and you should read the articles above first. If you are the first tutee on the group list then you are to research the first topic; if the second on the list then the second topic; and so on. You should prepare some preliminary notes on your assigned topic for your next tutorial where each topic will be discussed by the whole tutorial group under the guidance of your tutor. Following the tutorial you will be turning these notes into a 1000 word submission for **Assignment 1**. Producing Assignment 1 is one of the assigned tasks in Topic 3. It will be assessed and the mark will account for 33% of your final mark in the Praxis Unit.

Assigned Topics 1-9 -

Industrial Robots	- Types	*1st Tutee*
	- Controllers	*2nd Tutee*
Artificial Intelligence	- Sensing	*3rd Tutee*
	- Control	*4th Tutee*
User Interfaces	- Design	*5th Tutee*
	- Evaluation	*6th Tutee*
Safety Critical Systems	- Examples	*7th Tutee*
	- Interlocks	*8th Tutee*
Software Negligence	- Examples	*9th Tutee*

References

Epstein, R.G., 1997, *The Case of the Killer Robot.* John Wiley & Son.

IEE, 1999, *Technical Report Writing.* Institution of Electrical Engineers, London.

Plato, 429-347 BC, *The Republic*. Penguin Books, 1955 edition. Translated by Henry Desmond Pritchard Lee.

Taylor, N.K., 2002, The Killer Robot [online]. Heriot-Watt University (MACS), 16th December 2002 [cited 7th July 2003]. SHTML. Available from:

http://www.macs.hw.ac.uk/~nkt/praxis/epstein/index.sht.

Answers to questions

2 Reporting Information

Answers from page 6.

Q1: a) Abstract

Q2: c) Loose ends

Q3: c) Isaac Newton

Q4: c) Publisher

Q5: d) Theft

Q6: c) 1 and 10

Q7: b) Short

Q8: c) Projections

Q9: d) Font variety

Q10: b) King