Rhetorical functions in academic writing

Introduction

Students are asked to write many different kinds of texts. Depending on your subject, these could be essays, laboratory reports, case-studies, book reviews, reflective diaries, posters, research proposals, and so on and are normally referred to as genres (See: genres in academic writing). These different genres, though, can be constructed from a small range of different text types.

If, for example, you are asked to write an essay to answer the following question:

Discuss possible solutions to the problem of international credit control.

You could answer it in the following way:

1. Define credit control, say what it is and give an example;
2. Explain why international credit control is a problem in business today, support your explanation by evidence from your reading;
3. Describe some possible solutions to the problem of credit control in an international context, again support your suggestions with evidence from your reading;
4. Describe the advantages and disadvantages of each of the possible solutions;
5. Decide which solution you would prefer and give reasons.

So in order to answer the question you need to be able to write texts to do the following:

- Define
- Give an example
- Explain why
- Support your explanation with evidence
- Describe a solution
- Describe advantages and disadvantages
- Choose
- Explain why

Bruce (2008) calls these various texts cognitive genres, but I have called them Rhetorical Functions.

Examples of texts and language.

A good source of language is Leech & Svartvik (1975). Typical rhetorical functions used in academic writing, based on: Werlich (1976) and Lackstrom, Selinker & Trimble (1973), are:

Descriptive

Writing descriptions

Examples

Read the following descriptions:

> An octopus appears to be just a huge head with eight long, fearful arms. Its head is soft and rubberlike. Its eyes stick out on stalks so that it can see in all directions. Its mouth is on the underside of its body and has powerful jaws shaped like a beak. The long arms, or tentacles, have double rows of suckers. These can fasten onto objects with such suction that they cannot be pulled off.

> The liver is the largest organ in the body. It weighs a little more than three pounds in an adult. It is wedge-shaped and is situated under the diaphragm, mostly on the left side of the body, where it is protected by the lower ribs. Somewhat like an intricate chemical factory, the liver takes the particles of glucose (which come from digested starches and sugars) and changes them into another kind of carbohydrate called glycogen , which it then stores. When the body needs sugar, the liver turns the glycogen into glucose again and sends it to the body tissues through the bloodstream.

> The Leclanché cell consists of a leakproof jacket containing a porous pot in which there is a paste of manganese dioxide and carbon granules surrounding a carbon rod . The top can be sealed with pitch. A zinc rod stands in a solution of ammonium chloride, and is connected to the carbon rod via a circuit and a light bulb . The zinc dissolves in the solution, setting up an electromotive force. The ammonium ions migrate to the carbon anode and form ammonia (which dissolves in the water), and hydrogen ions. Torch dry batteries and use wet paste cells of the Leclanché type.

> A 12-volt car battery has six two-volt cells connected in series. The cells have anodes of brown lead oxide and cathodes of porous grey lead immersed in sulphuric

acid. An electric current flows if the electrodes are connected through a conductor. When the battery supplies current the sulphuric acid converts the anode to lead sulphate, thus reducing the strength of the acid. This process is reversed during recharging. Each cell of the battery is made of several anodes and cathodes separated by porous insulators. The cells are housed in a hard rubber case and the various cells are interconnected with lead bars.

Language

Position, weight, structure, colour, composition, size, shape, function

Position

A is	adjacent to alongside below beyond facing (diagonally) parallel to underneath opposite in the middle of on the right of on the left of near close to touching behind in front of under on top of above below level with diagonally above vertically below	B
	between equidistant from	B and C.

Structure

X	is	nailed screwed	to	Y	by	Z

		fixed fastened linked welded tied connected attached				
	consists		of	Y and Z		
	contains includes					
	is	held in place secured supported suspended	by	Y		
		joined	to			
		mounted placed pivoted	on			

Colour

X	is	dark light pale bright dull	green. blue. red. yellow.

Composition

X	is	made of	metal. steel. alluminium. an alloy of A and B. cloth. silk. china. wood. plastic. glass.

Size and weight

X	is	6 cm	long high wide

X	is	6 cm	in	length height width diameter
		6 Kg		weight

The	length height width diameter	of	X	is	6 cm
	weight				6 Kg.

X	has	a	length width height diameter	of	6 cm.
			weight		6 Kg.

X	weighs	10 Kg

Shape

X	is	square round rectangular triangular semi-circular conical spherical hexagonal octagonal oval circular irregular	in shape

X	is	is shaped like a	square circle rectangle triangle semi-circle hexagon octagon

X	is	cubical cylindrical pyramidal spherical tubular spiral hemispherical conical	in shape

X	is	bulbous tapering concave convex	in shape.
		diamond-shaped kidney-shaped U-shaped star-shaped bell-shaped dome-shaped mushroom-shaped X-shaped crescent-shaped egg-shaped pear-shaped Y-shaped	.

Function

The	function purpose aim objective	of the	thermometer tripod	is to	measure the temperature. hold the beaker.

The	thermometer tripod	is used for	measuring the temperature. holding the beaker,

Properties

X is	light
	tough
	soft
	elastic
	malleable
	flexible
	soluble
	a good conductor of electricity/heat
	corrosion resistant
	combustible
	transparent
	smooth
	heavy
	brittle
	hard
	plastic
	ductile
	rigid
	insoluble
	a bad conductor of electricity/heat
	not corrosion resistant
	non-combustible
	opaque
	rough

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Narrating and reporting

Examples

Read the following texts:

Example 1

The Evolution of Sound Recording

The history of recording sound stretches back to 1857 when Leon Scott, intent on obtaining a picture of what sound waves looked like, devised a method for recording the vibrations in the air. His device, later patented as the Phonoautograph, used a large parabolic horn to channel incoming sound waves to a membrane covering the narrow end of the horn. A bristle attached to the membrane by a lever traced a path in a revolving cylinder coated with lamp-black. As the membrane vibrated in response to sound waves, the bristle etched a pattern in the lamp-black that corresponded to the frequency of the sound. Although this was useful for gaining a view of what different sound waves looked like, the device could only record incoming waves - there was no provision for playing back the sound wave traces.

After studying the Phonoautograph, Thomas Edison modified the basic design in 1877 so that it would be capable of playing back sounds. While the sound quality was rather pitiful, the fact that this feat could actually be accomplished encouraged others to continue development. Edison’s device utilized a grooved metal cylinder encased in tinfoil. A horn concentrated the sound waves when someone spoke into it. At the apex of the horn, a thin membrane attached to a needle transmitted the vibrations - the resulting waves were scored into the tinfoil as the needle moved up and down, creating a path of varying depth. The cylinder in this device was rotated by means of a hand crank. Once the sound was recorded, the needle was returned to the beginning of the groove. Turning the hand crank caused the vibrations captured

in tinfoil to travel from the needle to the diaphragm and a crude replica of the human voice emerged from the horn.

Alexander Graham Bell took this invention a step further by replacing the foil-covered cylinder with one coated with wax. The needle cut a pattern that varied in depth onto the wax surface. For recording, Bell relied on a very sharp stylus and firm membrane. During playback, he switched to a dull stylus and a looser membrane so as not to destroy the original impressions. To reuse the cylinder, the wax could be shaved and smoothed. For the first time, sound recording could be accomplished on removable and reusable media. The process was further improved with the addition of an electric motor to replace the hand crank, so that recording and playback took place at uniform speeds. Recorded cylinders were then metal-plated to create a mould so that a number of copies of the original could be produced.

The technology spawned a mini-industry. Phonograph parlours sprang up around the country in the late 1800s where amazed visitors paid a nickel to hear voices muttering from these primitive playback devices.

The recording cylinder was replaced by a disc in 1888 when Emile Berliner devised a variation of this basic recording technique. Berliner's gramophone used a stylus travelling within a spiral groove on a flat disc. Sound waves caused the stylus to cut a pattern side to side within the groove. The pattern on the disc could then be reproduced using a metal mould and hundreds of recorded discs could be manufactured inexpensively from each mould. The disc itself was fashioned of metal covered with wax. After the stylus cut the pattern, removing the wax from its path, acid was used to etch the resulting waveform into the metal subsurface.

While the sound quality wasn't up to par with that of the cylinders, the recording method was better suited to mass production. By the year 1910, discs and spring-wound players were being sold all over the world featuring recordings by some of the most popular singers of that era. Development of the vacuum tube amplifier in 1912 by Lee de Forest spurred efforts to combine the phonograph and gramophone with amplified playback, a process which took several more years.

During the same period that Edison, Bell, and Berliner were working on their sound recording devices, others were working on developing methods of magnetic recording of sound waves. The pattern of sound waves, instead of being imprinted on a disc or cylinder, is translated into a series of magnetic domains that can be stored on a variety of media. The first patent for such a device was claimed by Oberlin Smith in 1888. Later, a man by the name of Poulson created a magnetic sound recorder that used steel tape as the recording medium. He exhibited his invention at the Paris Exhibition in 1900, calling his device a Telegraphone.

The radio broadcast industry was very interested in equipment that could store sound and immediately play it back, since it enabled them to repeat some broadcast

material - such as newscasts - whenever required. The tape could also be easily erased and reused - another major benefit. Work by DeStille in 1924 resulted in the Blattnerphone, which impressed the British Broadcasting Company enough to draw them into the development process. The Marconi Wireless Telegraph Company also jumped into the development effort, using steel-based magnetic tape that was initially biased to saturation. Rudimentary magnetic recorders were produced, although the early versions required literally miles of steel tape to accommodate 20 or 30 minutes of recorded sound.

Cumbersome steel-based tapes gave way to plastic-based magnetic tape. The magnetic oxides coating plastic-based tape can be formulated differently to change their recording and sound-storage properties. Undesirable characteristics such as print-through (the tendency of magnetic signals to leach through one layer of tape and affect adjacent layers) can be minimized through a choice of magnetic oxide.

Magnetic methods of recording are still widely used in cassette recorders and reel-to-reel decks, and improvements in electronics, recording media, magnetic recording heads, and noise-reduction techniques have maintained the viability of this recording method. However this method of recording is subject to certain limitations that have been largely overcome by digital recording techniques. Signal-to-noise ratios of recorded sounds, among other factors, have been greatly improved by digital storage methods.

After many years of development, digital recording gear has largely surpassed analogue, reel-to-reel, and magnetic tape recorders. Digital recording machines - such as the DAT, ADAT, RDAT, recordable mini-disc, portable studios with removable hard disk drive storage, and home computers have changed our perception of “high-fidelity” audio to startlingly clearer levels. In the digital realm, the signal-to-noise ratio is greatly improved over analogue equipment, meaning the dynamic representation of the music is greatly improved. The familiar hiss and tape noise common to analogue recording is conspicuously absent in digital recordings. This particular improvement in recording techniques ensures that the softest passages in a recorded musical work or speech will be as free of noise as the loudest levels of recorded audio. The recordist has a greater dynamic range to work with when using digital recording techniques, and fewer processing “tricks” are required to guarantee an effective sound recording.

(From: *Internet audio sourcebook*, by Lee Purcell & Jordan Hemphill, Wiley, 1997)

Example 2

The 1979 study was conducted to test the validity of the strong version of the critical period hypothesis. It was felt that a comprehensive study of foreign language learning ability required hard data upon which to confirm or reject the

strong version. Lacking precise statements about what aspects of phonology the hypothesis involved, we included both competence and productive performance in our informants' task, believing that if we could locate persons who had learned a second language as adults and who could consistently pass as native speakers of that language under rigorous test conditions, we would have ample grounds upon which to reject the strong form of the hypothesis.

Seven non-native informants along with three native-speaking controls were tape-recorded reading a carefully-prepared corpus in French. The non-native informants were selected for the study on the basis of their ability to pass as native speakers of French in casual conversation situations. These conversations took place in the presence of three French-speaking persons who were thoroughly familiar with the goals of the research. The French corpus included numerous sounds and sound sequences known to be especially difficult for English-speaking students. The ten tape-recorded passages were placed in five random order blocks and re-recorded onto cassettes for scrutiny by native-speaking judges. These judges included 85 French Canadians whose dominant language was French, approximately half of whom were students at the University of Ottawa. They were directed to listen carefully to each passage, and, the second time around, to assess each speaker as: 1) *Francophone du Canada;* 2) *Francophone dun autre pays,* 3) Non-francophone. Five of the seven non-native informants were consistently evaluated by our native-speaking judges as francophone. Their scores closely approximated those obtained by our native-speaking controls.

Example 3

Drama in language teaching.

Plays have been employed to teach skill in language only since the Middle Ages.

In Greece and Rome performing on stage was beneath the dignity of the class whose children could afford to go to school and a social ban remained on this activity until the tenth century, when a German abbess, Hroswitha, composed Latin plays for her novices. The expressed aim was to replace the plays of Plautus and Terence, then considered too saucy for use in the cloister. Owing to the now usual way of acting out the Bible stories in mystery plays, stage work was not an unusual recreation among clerics. Latin plays, written in the classical manner, were often played in the monasteries by the troupes of monks who staged the mystery plays in the churchyard.

Taking their cue from these mystery plays, the Jesuits developed another approach. Many of their plays were in a classical style, but the characters were abstractions drawn from grammar and literary criticism. The plays were meant both to drill pupils in speaking Latin and Greek and to teach formal grammar. it is not unlikely that the characters were modelled on the personifications of the *De nuptiis*

Philologiae et Mercurii of Martianus Capella, which was still known during the Renaissance. This type of allegory had been a favourite device among medieval poets, and Martianus Capelia had had many medieval imitators in vernacular languages.

One of the last sets of this type of play was the dramatized version of the Ianua linguarum, published in 1664. The adaptation was made by D. Sebastianus Macer for the use of the school of Patakina, at which he had taught, and which was regarded, even by the master himself, as a model school. Though the book followed all the allegorical conventions of the Jesuit play, there were several important differences. First, the Cornenius plays were in prose, while the others had been in verse. Second. the exact classical format was not followed, the plays being of varying length and shape. But as the taste for allegory waned, so too did interest in this sort of play.

Classical drama formed an integral part of the Renaissance classics curriculum. In England several who founded grammar schools specified that a classical play should be performed every year; and on the continent, where Catholics were teaching in Protestant schools and vice versa, the religious climate excluded contemporary religious plays, so the classical repertoire was used exclusively. But medieval scruple hung on grimly, even into the eighteenth century.

In England especially, the custom of an annual performance of a classical play was still vigorously flourishing at the end of the nineteenth century, school editions being prepared with staging in mind. Owing to the activities of the great German classicists, the basic texts were now solidly established, but for school use they were carefully expurgated, a difficult task considering the exigencies of meter. Many editors normalized the preclassical spelling and even added stage directions. The place of such presentations was strengthened by the advent of the Direct Method, and they spread to the teaching of modern languages. Though it was considered most desirable to use plays written for native audiences, this means of instilling confidence was made available to younger pupils by providing them with plays in simplified language and style. As far as modern plays were concerned, teachers were inclined to choose those which reflected the culture of the country.

In modern schools and universities the modern-language play came to be a special show put on for the delectation of students' parents and staff wives, but it also had the serious purpose of having pupils exercise their oral skills under some difficulty. In Russia, some schools encouraged the pupils to run puppet theatres in the foreign language, a natural outcome of the general interest in this art form.

Example 4

In early 1982 telephone interviews were conducted with a statewide probability sample of 2,083 registered voters in a major southwestern state. The interviews

were conducted for a state agency and addressed various voting-related attitudes and opinions.

Within this context, a split ballot (experimental) design was employed whereby approximately each quarter of the sample was asked age utilizing a different question format. Three open-end and one closed-end question formats were investigated:

- How old are you?
- What is your age?
- In what year were you born?
- Are you 18-24 years of age, 25-34. 35-49, 50- 64, 65 or older?

Each question format was drawn from previous research and was selected to be illustrative of one approach to asking age. The particular question format used when asking an individual study participant his or her age was randomly determined prior to the interview. Interviewers made no determination as to what age question format was employed for a specific study participant.

All interviews were conducted from a centralized, supervised interviewing location and began with an interviewer asking to speak to a prespecified individual. The interviewer then introduced himself/herself and stated who was conducting the study and asked for the potential study participant's cooperation. The questionnaire consisted of 20 questions, of which the age question was number 15.

Actual age data were available from the state agency for 1,324 of the individuals interviewed. Therefore, following the completion of an interview it was possible to compare an individual's reported age with his or her actual age. This in turn permitted inferences as to which question format produced the most accurate age data as well as which format resulted in the lowest refusal rate or nonresponse rate.

Language

Past tense is common.

Chronological order is also common, but when we are writing about past events, it is necessary to be explicit about the order in which things happened. To make the order clear, we mention dates and time, and we also use various links and connectives.

Time

In 1942, ...

During the 20th century, ...

Yesterday, ...

Twenty five years ago, ...

Sequence

before

Before he was offered a job as a lecturer,	he had finished his research.

Before this, …

For the previous X years, …

Prior to this, …

Previously, …

X years previously, …

Before…

… before which …

… prior to which …

after

When As soon as After	he had finished his research, he was offered a job as a lecturer.

On finishing his research, After finishing his research, Having finished his research, On finishing his research,	he was offered a job as a lecturer.

For the following X years, …

X years later, …

After …

Following this, …

When …

Subsequently, …

Soon/Shortly/Immediately afterwards, …

… following which …

… after which …

while

<table>
<tr><td colspan="2">While he was doing his research,</td><td rowspan="3">he made an important discovery.</td></tr>
<tr><td>When
While</td><td>doing his research,</td></tr>
<tr><td colspan="2">During his research,</td></tr>
</table>

During this period, …

Throughout this period, …

… during which…

… throughout which…

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Defining

In academic writing, it is often necessary to define your terms.

Examples

> Lava is the name applied to the liquid rock material, or magma, when it reaches the surface, as well as to the solid rock formed by consolidation due to cooling. The temperature of lava as it comes to the surface may exceed 2000°F, for copper wire with a melting point of 2200°F was melted in the lava from Vesuvius, and at Kilauea a temperature of 2300°F. has been observed.
> *This earth of ours* by Victor T Allen, p. 3

In this case, the term "lava" is being defined.

> The sediment deposited by a stream is called alluvium.
> *This earth of ours* by Victor T Allen, p. 97.

In this example, "alluvium" is being defined.

> Diseases and symptoms
> A disease is normally defined as an abnormal condition of the body that has a specific cause and characteristic outward 'signs' and symptoms. Technically speaking, a 'sign' is considered to be an indication of a disease that is noticed by the doctor but not by the patient, while a symptom is something felt or perceived by the patient himself - but this distinction is often blurred in ordinary conversation.

In this example, definitions of "disease", "symptom" and "sign" are defined.

> Most metals are malleable; they can be hammered into flat sheets; nonmetals lack this quality. Some metals are also ductile; they can be drawn out into thin wires; nonmetals are not usually ductile.
>
> *Inquiry into earth and space science, by William J Jacobson*, p 104-105.

The definition is not explicit in this case, but the words "malleable" and "ductile" are defined.

Language

X is ...
X is called ...
X is known as ...
X may be defined as ...
X is a type of Y that/which ...
A type of Y which ... is X

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Writing instructions

Examples

Instructions can be given in many ways. A numbered list with the imperative form of the verb is one common way. Continuous text using the passive form of the verb with *should* is another common way. Make sure you distinguish between giving instructions - that is, telling someone how to do something - and describing a process - that is describing how something

happens. Look at the following examples of different ways of giving instructions. Notice the highlighted language items:

Calculating the standard deviation

1. Put the scores in order down the page.
2. Work out the mean.
3. Now calculate how much each deviates from the mean.
4. Now square each of these deviations.
5. Add them all up.
6. Now divide by the number of scores.
7. Lastly find the square root.
8. This is the standard deviation.

Mouth-to-mouth artificial respiration

In certain accidents, if breathing stops, it is possible to save life by artificial respiration. This means that someone else causes air to enter and leave a person's lungs. The method of artificial respiration now recommended by the U.S. Army, the Red Cross, and the Boy Scouts of America is a method of mouth-to-mouth breathing. First, place the victim face up. Tilt the victim's head back so that the chin is pointing upward. Next, if there is any foreign matter in the victim's mouth, wipe it out quickly with your fingers. Then, with your right-hand thumb, pull the jaw down to clear the tongue from the air passage in the back of the victim's mouth. With your left hand, pinch the nostrils to prevent the air you blow into the victim's mouth from escaping through the nose. Now, place your mouth tightly over the victim's and blow into his or her mouth until you see the chest rise. Remove your mouth, turn your head to the side, and listen to the outrush of air that indicates air exchange. Repeat blowing. For an adult, blow vigorously at a rate of about twelve breaths a minute. For a young child, take relatively shallow breaths, at a rate of about twenty a minute.

Creating a new Web page

You don't need any special tools to create a Web page. You can use any word processor, even WordPad or SimpleText, which are included with the basic Windows and Macintosh system software.

To create a new Web page:

1. Open a text editor or word processor.
2. Choose File > New to create a new, blank document.
3. Create the HTML content as explained in the rest of this book.

4. Choose File > Save As.
5. In the dialog box that appears, choose Text Only (or ASCII) for the format.
6. Give the document the .htm or html extension.
7. Choose the folder in which to save the Web page.
8. Click Save.

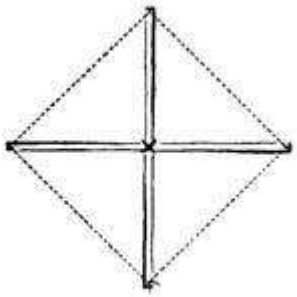
Printing black and white photographs

1. Chemical solutions should be prepared and arranged in three dishes in the order in which they will be used - developer, stop bath and fix. They must be brought down or raised to the correct temperature (about 20°C) and there should be enough of each to give a depth of 5cm.
2. The film should be cut into strips so that all will fit on to a single sheet of 10 x 8in paper. Clean the negatives and the sheet of glass with an anti-static cloth. Then switch off the white light and switch on the safelight.
3. The enlarger is a convenient light source. The height of the head should be adjusted so that its beam illuminates an area slightly larger than the sheet of glass being used. Stop down to f8 and cover the lens with the safe filter.
4. Take a sheet of printing paper and lay it, emulsion (glossy) side up, in position under the enlarger. It will not, of course, be affected by the filtered light from the enlarger. Lay the negatives, emulsion (matt) side down, on top of the paper and cover them with the sheet of glass to hold them in place.
5. Switch off the enlarger and then move the safe filter away from the lens. Switch on the enlarger again and expose the paper for 10 seconds. This should be accurate to within about one second.
6. The exposed photographic paper should now be taken from under the glass and slid into the developer dish, emulsion side up.
7. When the paper has been in the developer for about 30 seconds the image should begin to appear and it will continue to darken for about two minutes. Agitate the paper gently during this period by rocking the dish or moving the paper about carefully with the tongs.
8. After the prescribed time the image reaches a stage where there is little further change in its density. At this point, remove the sheet from the developer and let the liquid drain off.
9. When the developer solution has drained off the paper, take the second pair of tongs and transfer it to the stop for 15-30 seconds.
10. Transfer the print from the stop bath to the fixer. After about a minute the white light may be switched on and the print can be examined.
11. The print should now be transferred to the wash and kept there face down for 30 minutes, or at least twice as long for double-weight paper. In the case of resin-coated paper it need only be for five minutes.

12. The finished print should now be dried. If a squeegee roller or photographic blotting paper is used to remove excess water care should be taken not to get dust on to the surface, which will remain tacky until the print is dry.

HOW TO MAKE A KITE

TWO-STICK SQUARE KITE


SQUARE KITE

Frame. No matter what size, you'll need two strips of wood the same length. A lightweight wood like pine, spruce, or split bamboo is best. For kites more than 1 metre in length, use wood 1 cm. wide. For smaller kites, use 75 mm wood. First, notch both ends of each piece to a depth of about a quarter of an inch. Next find the center of each piece, position the two at right angles, and glue. When the glue is dry, lash the pieces together with fishing line or heavy thread and spread a thin coat of glue over the lashing. (Don't fasten with nails, tacks, or staples, since they add weight and weaken the wood.) Then string lightweight cord or fishing line through the notches so that the resulting frame is taut.

Cover. Use newsprint for smaller kites and brown wrapping paper or any paper about the same weight for larger ones. If the paper is wrinkled, it should be ironed. Next, outline the frame on the paper, leaving an extra inch all the way around. If the cover is to be decorated, this is the time to do it. Use crayon, water colors, or glue-on cutouts. Then glue the cover to the frame, bending the extra inch around the string and leaving room for the crosspieces to protrude. The cover should be tight and flat. After it is in place, apply a light coating of shellac or dope.

Controls. The kite's controls are the bridle, which is used for steering, and the tail, which helps keep the kite upright. For the bridle, use two lengths of string, each about a quarter again as long as one of the supports. One piece is fastened a few inches from each end of the horizontal support, and the other is attached in the same way to the vertical support. The flying line, for which you'll need at least 100 metres of wrapping twine, is fastened where the strings meet. For the tail, start with 5 metres of string; more, if the kite is a large one. Attach strips of rag at 25- or 50-cm intervals; then fasten the tail at a point 10 or 15 cm above the base of the kite. Determining the proper length for the tail is a matter of trial and error. If the kite dives, haul it in and add more. When the tail is right, the kite will remain on an even keel.

(Adapted from: *How to fly a kite, catch a fish, grow a flower and other activities for you and your child.* by Alvin Schwartz, 1964.

Exercises

Try this exercise: Exercise 1

Language

Sequence

Sequence, or order, is important in giving instructions. The table blow shows some common expressions used.

Firstly,	The first step is
First of all,	The first stage is
To begin with,	. begins with
Initially	. commences with
Beforehand,	Before this,
Previously,	Prior to this,
Earlier,	
At the same time,	During
Simultaneously,	When this happens
	While
Secondly, Thirdly etc	After this,
Next,	The next step is
Then,	In the next stage,
Subsequently,	In the following stage,
Later,	Following this,
	As soon as the committee has finished its work, .
Eventually,	. until .
Lastly	. finishes with .

Finally,	concludes with
In the last stage,	The last step is .

Manner - how something is done

in such a way that...

slowly, carefully, etc

with care/precision

in a careful way/manner

Purpose - why something is done

so as to .

so as not to .

so that .

in order to .

in order not to .

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Describing function

Examples

Read the following texts:

The function of the skin

Each of the structures which comprise the skin has one or more functions, many of which play a vital role in maintaining good health. Those which may be affected in acne, eczema or psoriasis are also described in a little more detail.

A primary purpose of the skin is to provide a flexible, protective shield between us and the outside world. This is made possible by the layers of dead, flattened epithelial cells which prevent micro-organisms and chemicals from entering the body, and by the waterproofing effect of the keratin, fats and oils. These protective

benefits would not last long, however, if skin cells were not replaced. This happens by a process of continuous cell division in the basal layer, nutrients being provided by the blood vessels in the papillary layer. As the cells move towards the outer surface, they lose their nuclei, gradually become keratinised, and die.

Linked with cell division is the process of wound healing. This involves the inward migration of cells such as *fibroblasts* and white blood cells, the release of special chemicals called growth factors that stimulate the repair process, and increased cell division of the epidermis to provide a new, intact surface layer. Redness and swelling around a wound indicates that the blood vessels are enlarged and 'leaky' – a reflection of inflammation and an immune response which contribute to the removal of dead and damaged tissue.

Temperature regulation is also an important activity of the skin. The large amounts of liquid lost during perspiration evaporate from the surface and cool it. Also, blood vessels open up to dissipate heat when you are overheated – hence the pink flush when you are warm – and contract when the body needs to conserve heat. Sweat also contains waste materials such as urea and up to 1 gramme of waste nitrogen may be lost through the skin every hour.

Skin also has a protective role in screening out potentially harmful ultraviolet (UV) rays from the sun by manufacturing melanin pigments. However, UV is also involved in chemical reactions leading to the synthesis of vitamin D3 – vital for normal growth of teeth and bones and for the absorption of calcium from food. Blood and lymphatic vessels are more numerous in the hypodermis than in the dermis, showing that it plays a key role in defence against the penetration of foreign materials or pathogens. Its other functions are largely storage (fats), cushioning and attachment.

What are the functions of blood in dogs?

Each component of blood has very specialized and important functions.

- Red blood cells contain hemoglobin, which is a red, iron-rich protein. Hemoglobin enables red blood cells to carry oxygen from the lungs to all parts of the body. Red blood cells give blood its color. When the blood is rich in oxygen it is red, and when there is little oxygen in the blood, the blood is blue. Because blood traveling from the lungs to the body usually contains lots of oxygen, blood in the arteries is normally red. Much of the oxygen is removed from the small capillaries by the body tissues, so blood in the veins tends to be blue in color.
- The white blood cells defend the body against disease. They destroy bacteria and foreign material, they stimulate inflammation and assist in the healing process, and they produce proteins called antibodies that destroy bacteria,

viruses, and other diseases. WBCs move in and out of the blood stream, depending upon where they are needed.

- Platelets help the blood to clot. They group together to form clumps, plugging any holes that develop in blood vessels. Clumps of platelets form a scaffolding upon which a blood clot may form. Formation of a blood clot is a complicated process called coagulation.
- Plasma is the watery material that carries all other components of the blood within the blood vessels. If water is lost through dehydration, wounds or burns, then the blood can become thickened, almost like sludge, and circulation will be adversely affected.

The function of schools

For Dewey education primarily involves interactions that empower the individual to take an active and intelligent part in social life. Pedagogy, on this account, must involve strategies and methods to emphasize power rather than appreciation; the "enlightened and trained capacity to carry forward those values which in other conditions and past times made those experiences worth having" rather than the empathic assimilation of others' experiences. Schools must provide educative experience which will give the student such possession of him or herself that she or he may take charge of him or herself; may not only adapt him or herself to the changes which are going on, but have the power to shape and direct those changes. Dewey sees the educative function of schools in their capacities to provide those experiences, some of which are embodied in the occupations of work and play. There is a clear view in Dewey that these occupations serve a connective function; they do not preserve the past, but connect the past to the present and future of the child's interests and activities.

THE DEATH PENALTY

I want to organize under five simple verbs my own reasons for thinking that the death penalty is a bad thing. If we catch a man who has committed a murder, try him and convict him, we have to do something more with him than punish him, because, although he must be punished, there are several other things that ought to happen to him. I think that the whole theory of what ought to be done to a convicted murderer can be summed up in the five verbs: prevent, reform, research, deter and avenge. Let me take these five things in turn and see how the death penalty now looks as a means of achieving them.

The first is 'prevent'. By this I mean preventing the same man from doing it again, to check him in his career-though, of course, nobody makes a career of being a murderer, except the insane, who are not at issue in the question of the death penalty. I believe that I am right in saying that in the course of a century there is

only one doubtful case of a convicted murderer, after his release at the end of a normal life sentence, committing another murder. I think that that means, statistically, that the released murderer is no more likely to murder again than anybody else is. The question of long sentences comes in here. If the sane convicted murderer is not to be hanged, should he be imprisoned, and should the length of his service be determined in a way not the usual one for the actual sentence served? I think this question can be answered only by looking at the statistics of how likely a man is to do it again. In other words, how likely a prison sentence for a given number of years, 15, 20 or 30 years, is to prevent him from doing it again. There is a wealth of statistics available to us on that. I do not think they suggest that the convicted murderer who is not hanged should have his prison sentence dealt with in any way differently from that in which prison sentences are usually dealt with.

To turn to the second verb on my list, 'reform'. That is rather a nineteenth century word, and perhaps we should now say 'rehabilitate', stressing more the helping of a man with his social functions rather than adjusting his internal character; but that is a minor point. It is clear that, whatever we may think about what is able to be achieved in our prison system by treatment in the reformatory and rehabilitatory way - and it is open to criticism for lack of funds and so on-it is obvious that less can be achieved if you hang a man. One man who is utterly unreformable is a corpse; and hanging is out of the question, because you cannot achieve any form of reform or rehabilitation by it.

The next word is 'research'. This is not part of the traditional idea of what to do with a convicted murderer. It is rather a new notion that it may be an appropriate purpose in detaining a criminal and inflicting punishment and other things upon him that research should be conducted into the criminal personality and the causes of crime. At the moment we hang only the sanest criminals. We can get all the research we want into the motives, characters and personality structures of those with diminished responsibility, the insane and those under an age to be hanged. But the one we cannot research into is the man who is sane and who commits capital murder in cold blood on purpose. It might be that if we were to keep this man alive and turn psychiatrists and other qualified persons on to talking to him for twenty years during his prison sentence we should find things that would enable us to take measures which would reduce the murder rate and save the lives of the victims. But in hanging these men we cut ourselves off from this possible source of knowledge of help to the victims of murder.

The fourth word, 'deter', is the crux of the whole thing. Abolitionists, as we all know, have held for many years that evidence from abroad has for long been conclusive that the capital penalty is not a uniquely effective deterrent against murder. Retentionists of the death penalty have been saying for years that we are not like those abroad; we are a different country economically; our national temperament is different; and there is this and that about us which is not so about those in Italy, Norway or certain States of the United States, New Zealand, India, or wherever it may be. Now we have this remarkable pamphlet which in effect closes

that gap in the abolitionists' argument. It shows within mortal certitude that we are exactly like those abroad, and that in this country the death penalty is not a uniquely effective deterrent against murder.

The last on the list of my five verbs is 'avenge'. Here the death penalty is uniquely effective. If a man has taken life, the most effective, obvious and satisfying form of vengeance is to take his life. I have no argument against that. I think it is true that if one accepts vengeance as a purpose proper for the State in its handling of convicted criminals, then the death penalty should stay for convicted murderers. For myself - and it is only a personal matter - I utterly reject the idea that vengeance is a proper motive for the State in dealing with convicted criminals; and I hope that, from the date of the publication of this pamphlet onwards, those who wish to retain the death penalty will admit that its only merit is precisely that of vengeance.

(Lord Kennet from a Speech in the House of Lords, November 9th, 1961)

Language

- The thermostat controls the temperature.
- The thermostat is used for controlling the temperature.
- The function of the thermostat is to control the temperature.
- The thermostat serves to control the temperature.
- A thermostat is an instrument for measuring temperature.
- A thermostat enables the researcher to measure the temperature accurately.
- The function of advertising is to market products and services to potential buyers in an effective and persuasive manner

^

Describing processes

Examples

Here is a description of the process of sorting letters.

First of all, letters and packets are collected in bags from pillar boxes, post offices and firms, in post office vans. They are then taken to the sorting office, where the bags are emptied and the letters separated from the packets. Following this step, the letters are put through machines so that the stamps can be cancelled. In this process the date and place of sorting are put over the stamps on each envelope. In the next stage, the sorting of the letters takes place, according to the county they are addressed to. This is done by placing them in the appropriate pigeon hole. Subsequently, the letters are taken from the pigeon holes and placed in baskets,

which are then put onto a conveyor belt. While on this conveyor belt, the baskets are directed to the appropriate secondary sorting section by means of coding pegs. At the secondary sorting frames, the letters are put into towns in the county. Later, the letters are tied in bundles and a label is put on showing the towns they are addressed to. Finally, the letter bundles are placed in bags, which have the Post Office seal, Post Office Railway number and Destination Code number on them, and then these are sent to the railway station.

Notice that the passive form of the verb is widely used. This is because in this type of writing, we are usually more interested in the process than in the people doing the work. Observe all the link words.

Example 1

MAKING A TRANSISTOR

1 FIRST MASKING

The silicon base is first coated with silicon dioxide, which does not conduct electricity, and then with a substance called photoresist. Shining ultraviolet light through a patterned mask hardens the photoresist. The unexposed parts remain soft.

2 FIRST ETCHING

A solvent dissolves away the soft unexposed layer of photoresist, revealing a part of the silicon dioxide. This is then chemically etched to reduce its thickness. The hardened photoresist is then dissolved to leave a ridge of dioxide.

3 SECOND MASKING

Layers of polysilicon, which conducts electricity, and photoresist are applied, and then a second masking operation is carried out.

4 SECOND ETCHING

The unexposed photoresist is dissolved, and then an etching treatment removes the polysilicon and silicon dioxide beneath it. This reveals two strips of p-type silicon.

5 DOPING

The hard photoresist is removed. The layers now undergo an operation called doping which transforms the newly revealed strips of p-type silicon into n-type silicon.

6 THIRD MASKING AND ETCHING

Layers of silicon dioxide and photoresist are added. Masking and etching creates holes through to the doped silicon and central polysilicon strip.

7 COMPLETING THE TRANSISTOR

The photoresist is dissolved, and a final masking stage adds three strips of aluminium. These make electrical connections through the holes and complete the transistor.

In this transistor, known as an MOS type, a positive charge fed to the gate attracts electrons in the p-type silicon base. Current flows between the source and the drain, thereby switching the transistor on. A negative charge at the gate repels electrons and turns the current off.

Example 2

Carbon, the basic element of organic chemistry, undergoes a natural cycle in the environment. It exists in the form of carbon dioxide in the atmosphere. From there it is absorbed by plants to build carbohydrates in green leaves. When plants burn, and animals breathe out, carbon dioxide passes back into the air. Also in decaying plant and animal remains, carbohydrates are broken down to release carbon dioxide into the atmosphere.

Example 3

THE PHOTOCOPIER

Static electricity enables a photocopier to produce almost instant copies of documents. At the heart of the machine is a metal drum which is given a negative charge at the beginning of the copying cycle. The optical system then projects an image of the document on the drum. The electric charge disappears where light strikes the metal surface, so only dark parts of the image remain charged. Positively charged particles of toner powder are then applied to the drum. The charged parts of the drum attract the dark powder, which is then transferred to a piece of paper. A heater seals the powder to the paper, and a warm copy of the document emerges from the photocopier. A colour copier works in the same basic way, but scans the document with blue, green and red filters. It then transfers toner to the paper in three layers coloured yellow, magenta and cyan. The three colours overlap to give a full colour picture.

Example 4

PAPERMAKING

Printing is of little use without paper. A sheet of paper is a flattened mesh of interlocking plant fibres, mainly of wood and cotton. Making paper involves reducing a plant to its fibres, and then aligning them and coating the fibres with materials such as glues, pigments and mineral fillers.

1 FELLING

Trees are felled and then transported to paper mills as logs.

2 DEBARKING

The bark has first to be stripped off the logs without damaging the wood.

3 PULPING

Pulping reduces the wood to a slurry of loose fibres in water. The logs are first sliced into chips and then treated with chemicals in a digester. These dissolve the lignin binding the wood fibres together. Alternatively, machines may grind the logs in water to produce pulp. The pulp is then bleached.

4 MIXING

The pulp goes to the mixer, where materials are added to improve the quality of the paper. The additives include white fillers such as china clay, size for water-proofing, and coloured pigments. The mixer beats the fibres into a smooth pulp.

5 FORMING THE WEB

Liquid pulp is fed from the flowbox onto the mesh belt. Water drains through the holes in the mesh; the drainage is accelerated by suction. The dandy roll presses the fibres together into a wet ribbon known as a web.

6 PRESSING

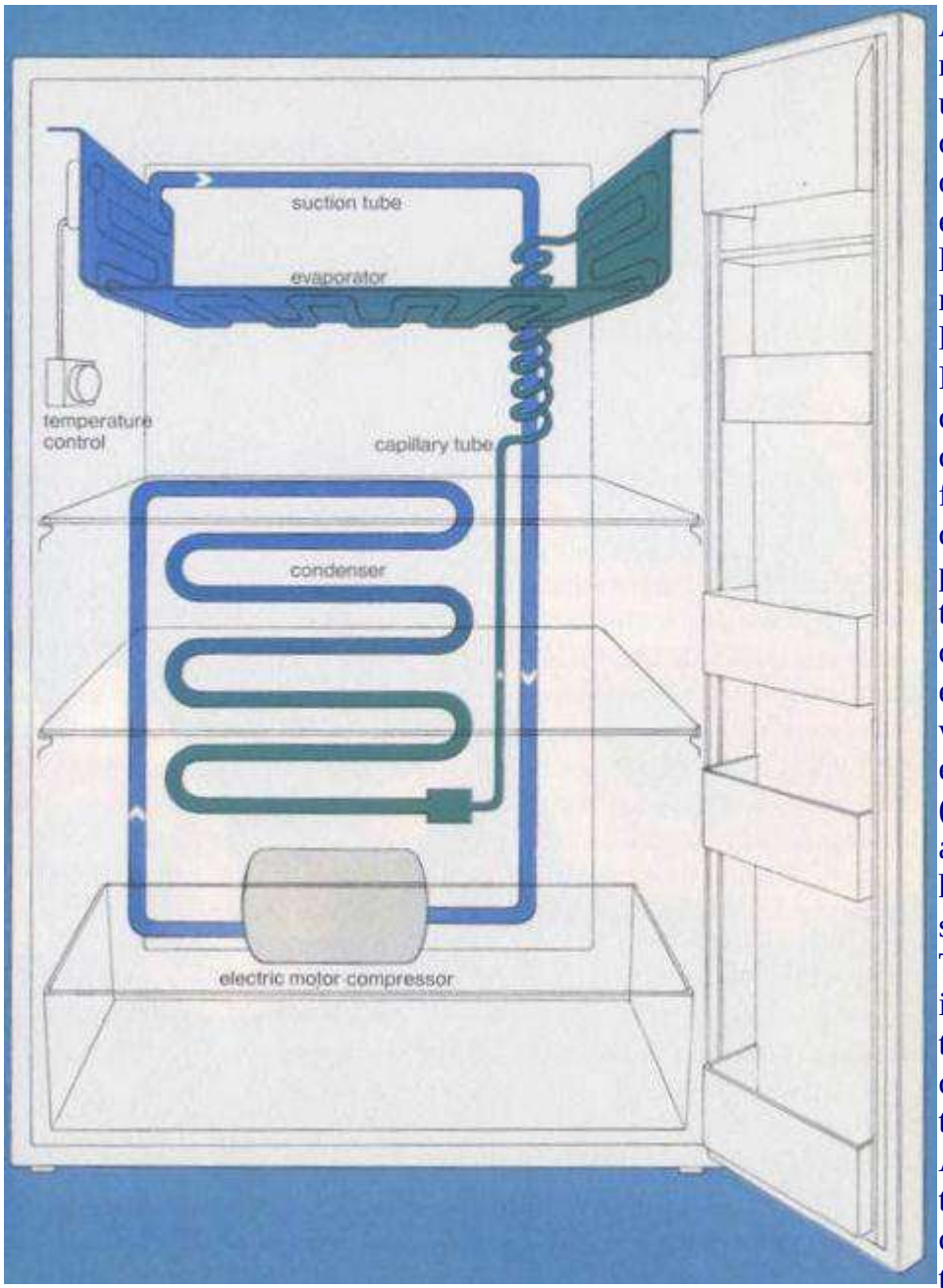
Belts move the web between the press rolls, which remove more water and compress the paper.

7 DRYING

The damp web moves through the dryer, where it passes between hot cylinders and felt-covered belts that absorb water. It then passes through the calender stacks before being wound on reels or cut into sheets.

Example 5

THE REFRIGERATOR



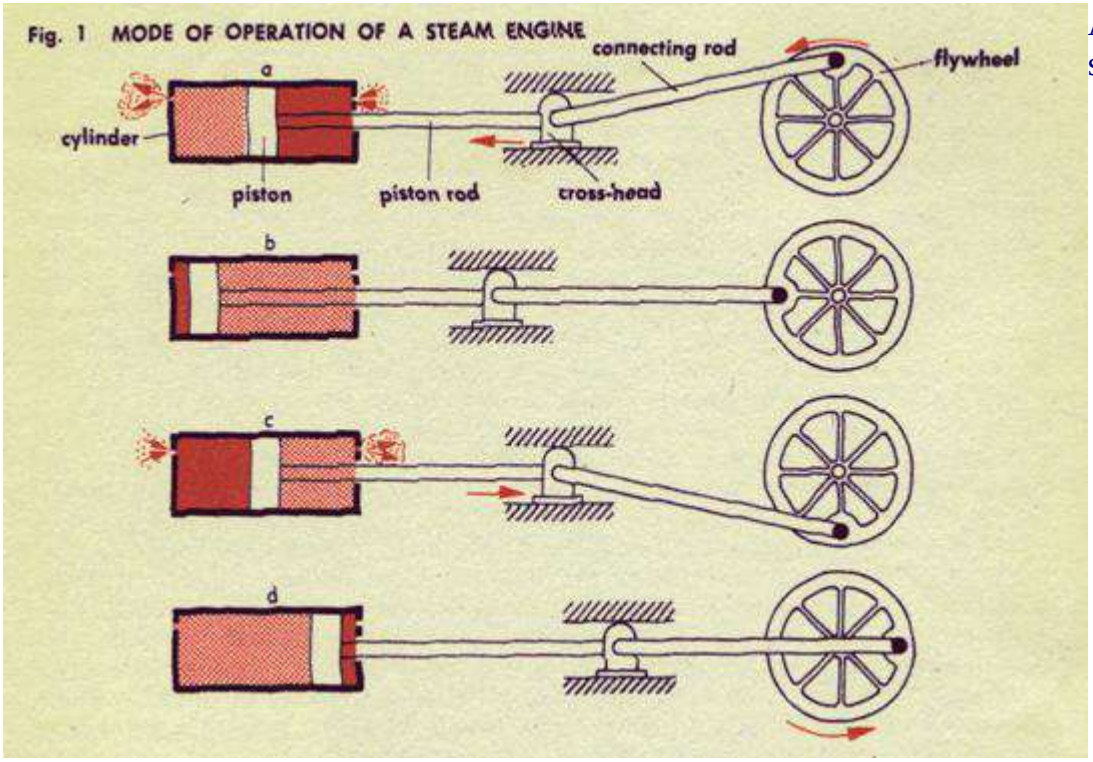
A domestic refrigerator uses the cooling effect of an evaporating liquid. A refrigerant liquid (such as Freon, a compound of carbon, fluorine and chlorine) is pumped through cooling coils (the evaporator) in which it expands (evaporates) and absorbs heat from the surroundings. The evaporator is formed into the ice-making compartment of the refrigerator. After passing through the cooling coils in the evaporator, the vapour is then compressed by a compressor (usually driven by an electric motor) and condensed back to a liquid when the absorbed heat is given out. The cycle of events is then repeated over and over again. The refrigerator is really a heat engine working in reverse. In order to take heat out of the low-temperature interior of the refrigerator and transfer it to the higher temperature of the surrounding air, work must be done. If it is to work continuously, a refrigerator must be supplied with energy from outside. This external energy is usually electricity, which operates the electric motor driving the compressor, but it could be a gas flame. In the food chamber of a domestic refrigerator the temperature is just above the freezing point

of water, about 1° or 2°C: in the ice-maker and in the deep-freeze it is usually around -15°C.

(Adapted from: *The Penguin book of the physical world*, London, 1976)

Example 6

The Steam Engine

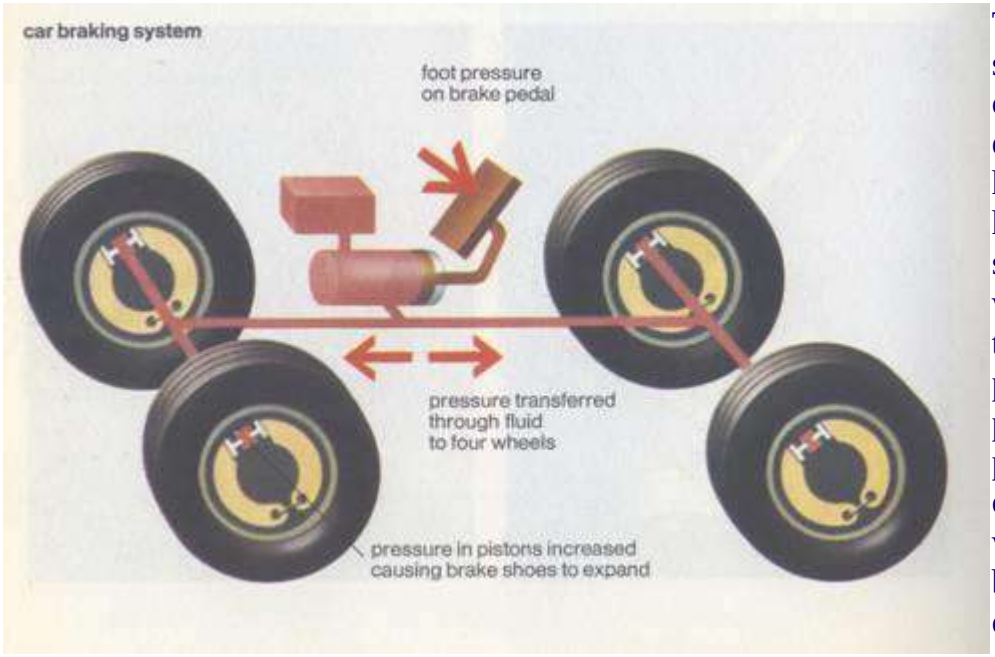


A steam engine utilises the energy contained in steam under high pressure. The energy that is released when steam expands is made to produce rotary motion which can be used for the driving of machinery. The steam from the boiler is admitted into the cylinder in which there is a piston and in which the steam expands, causing the piston to move (Fig. la). When the piston has travelled to the end of the cylinder and thus completed its stroke (Fig. lb), the now expanded steam is allowed to escape from the cylinder. At the same time the steam is changed over, live steam under pressure being admitted to the other side of the piston, causing the latter to travel back, past its starting point (Fig. lc), until it has reached the other end of its stroke (Fig. Id). A steam engine of this kind is called "double-acting" because the force of the steam is applied alternately on two sides of the piston. While the piston is being forced in one direction by the expanding steam, the spent steam is pushed out of the cylinder on the other side of the piston. Reversing, i.e., the change-over of the steam supply so as to ensure the admission of live steam to the appropriate side of the piston and the discharge of the spent steam on the other side, is effected automatically by a control device called a slide valve.

(Adapted from: *How things work 1*, Paladin, 1972)

Example 7

Car Braking System



The braking system of a car is a good example of how a hydraulic system works. When the brake pedal is pressed a piston operates which forces brake fluid out of the master cylinder and along four narrow pipes to the slave cylinders attached to the brake drums or discs so that the same pressure is applied to the brakes in each wheel. This brings the car to a smooth halt. Provided the system is kept filled with brake fluid, hydraulic brakes work instantly because liquids cannot be compressed to any great extent.

If air leaks into the system, the brakes become much less efficient. This is because, unlike liquids, gases are compressible and some of the movement of the brake pedal is taken up in squeezing the air bubble.

(From: *The Penguin book of the physical world.* Penguin, 1976)

Language

Sequence

Firstly,	The first step is
First of all,	The first stage is
To begin with,	... begins with

Initially	... commences with
Beforehand,	Before this,
Previously,	Prior to this,
Earlier,	
At the same time,	During
Simultaneously,	When this happens
	While
Secondly, Thirdly etc	After this,
Next,	The next step is
Then,	In the next stage,
Subsequently,	In the following stage,
Later,	Following this,
	As soon as the committee has finished its work, ...
Eventually,	... until ...
Lastly	... finishes with ...
Finally,	concludes with
In the last stage,	The last step is ...

Passive

The silicon base	is coated with silicon dioxide.
Letters and packets	are collected.
The bark	has to be stripped.

Method - how something is done.

First of all, letters and packets are collected in bags from pillar boxes.

This is done by placing them in the appropriate pigeon hole.

The baskets are directed to the appropriate secondary sorting section by means of coding pegs.

The drainage is accelerated by suction.

The vapour is then compressed by means of a compressor.

Position - where something happens

They are then taken to the sorting office, where the bags are emptied.

The pulp goes to the mixer, where materials are added to improve the quality of the paper.

The steam from the boiler is admitted into the cylinder in which there is a piston.

Purpose

Following this step, the letters are put through machines so that the stamps can be cancelled.

This is then chemically etched to reduce its thickness.

From there it is absorbed by plants to build carbohydrates in green leaves.

In order to take heat out of the low-temperature interior of the refrigerator, work must be done.

^

Classifying / categorising

When we classify, we arrange members of a group. For example, if we take the following list:

Physics, Chemistry, Biology, French, German, Spanish.

It is quite clear that we have two different types of word. We have science subjects and languages. So it is simple to divide the list into two:

Physics, Chemistry, Biology,	AND	French, German, Spanish

When we are classifying, we often need to say what our classification is and how we are making it.

Examples

Read the following text.

> Lavas may he divided into two contrasting types, acid and basic. Acid or siliceous lavas have a high silica content, about 70 to 75 per cent, and are stiff or viscous. They move slowly over the surface and solidify close to the vent. Basic lavas have a silica content of about 50 per cent. Dark colored and fluid, they flow more easily at lower temperatures and reach a greater distance from the crater than do acid lavas.
>
> *This earth of ours*, p. 3 .

- What is the text classifying? Lavas.
- How many types are there? 2
- What are the two types? Acid and basic.
- How do we make the distinction? The amount of silica present.

Look at these examples:

> ROCKS
>
> Scientists group rocks into three main types: igneous, sedimentary and metamorphic.
>
> IGNEOUS rocks are produced by white-hot material deep inside the earth which rises towards the surface as a molten mass called **magma**. If the magma stops before on it reaches the surface, it cools and forms rocks such as **granite**. If the magma erupts, it forms a red-hot stream called lava. When the lava cools it becomes rock. One of the most common lava rocks is called **basalt**. Igneous rock is used in the formation of the other two main types of rocks - sedimentary and metamorphic.
>
> SEDIMENTARY rock is formed by small particles or **sediments** such as sand, mud, dead sea animals and weathered rock. These are deposited in layers and become solid rock over millions of years as they are squeezed by the weight of other deposits above them.
>
> The word **metamorphosis** means 'change'. Rocks which have been changed by heat and pressure are called METAMORPHIC rocks. They are formed deep inside the earth. **Slate** for example is formed from compressed mud or clay. **Marble** is another type of metamorphic rock. It is produced from limestone which has undergone change through heat and pressure,

The chemical elements in the earth's crust are classified in two major groups - metals and nonmetals. Elements are classified as metallic or nonmetallic, according to their physical and chemical properties. Metals, for example, are usually good conductors of heat and electricity; nonmetals usually are not. Most metals are malleable; they can be hammered into flat sheets; nonmetals lack this quality. Some metals are also ductile; they can be drawn out into thin wires; nonmetals are not usually ductile. Metals usually have luster, and are able to reflect light. They also have a high density. Nonmetals usually do not exhibit these properties. A few elements, such as arsenic and antimony, exhibit both metallic and nonmetallic properties and are sometimes referred to as metalloids.

Inquiry into earth and space science, by William J Jacobson, p 104-105.

Types of food and their function

Before going further into the question of energy supply and demand, and its relationship to food, the major constituents of man's diet must be listed. These are: **carbohydrates**, the major energy-supplying foods; **proteins**, body building materials; **fats**, energy-rich food stores; **vitamins**, vital components of cell chemistry; **mineral salts**, raw materials of all metabolism; **water**, an obvious and essential compound required for internal cell pressure, the basic medium of cell chemistry and major constituent of blood and hence the transport system; and **roughage**, the mass of food, mainly composed of plant cellulose, that gives the solid bulk to food and thus enables the gut muscles to grip it and move it along by peristalsis.

Biology by J. M. Hard, p. 14

Exercise

Try this exercise: Exercise 1

Language

The tables below show some of the most common language used in texts which have classification as their purpose.

There are	two	types kinds classes categories sorts varieties	of lava	: acidic and basic. . These are acidic and basic.
The				are acidic and basic.

Lava	consists of comprises can be divided into	two	categories classes kinds types varieties	. These are acidic and basic. : acidic and basic.

Acidic and basic are	classes kinds types categories varieties	of lava.

Lava may be classified	according to on the basis of depending on	amount of silica present.

^

Giving examples

In academic writing it is common to make generalisations. It is often useful to support these generalisations with examples.

Examples

Look at the way examples are given in the following texts.

> The quiet outpouring of lava is characteristic of basaltic lavas with about 50 per cent silica. The Hawaiian volcanoes are typical examples. On the island of Hawaii, Mauna Loa rises 13, 675 feet above sea level and 20 miles away is Kilauea 4,000 feet high.

> Though the authorities do not seem to have been aware of the scale and significance of capital flows within the sterling area, they were aware that the exchange controls in that area were not all that London hoped. For example, a major recipient of capital from the UK in this period, Australia, had notoriously "leaky" controls.

> Morgan was not interested in the terms for themselves but in the principles which they seemed to reveal when they were put together. For example, he would have

been interested in the fact that the English word "uncle" can be used in speaking both of one's mother's brother and one's father's brother while in Swedish, for instance, two different words are used.

Understanding this religious social consciousness requires some grasp of the traditional Catholic teaching on the natural order and the good society, and how the nation is to respect the divine order established by God. An example of this can be taken from the recent contraception controversy which began in the 1960s.

What socialism there has been among the catholic _ nationalist tradition has always tended to be allied to republicanism, especially in the period 1913 to 1930 (Rumpf and Hepburn 1977: 13). The trade union movement was a case in point.

This was the situation which Morgan described for the Iroquois when several tribes get together, not any more on the basis of kinship or marriage, but on the basis of confederacy. This was exemplified by the league of the Iroquois which Morgan had studied in detail.

A key experiment shows this. A hole is made in the shell and a small cube of cells is carefully cut out from the posterior margin containing the polarizing region and grafted into the anterior margin of the limb bud of another embryo.

The explanation behind that paradox is once again the problem of the two uses of anthropology in their work. The rhetorical use they made of anthropologists' ideas as a source for a criticism of the society of their time, especially as a criticism of the way institutions such as the family, marriage, and the status of women were seen as unchangeable and eternally fixed, is one which seems totally justified to present-day anthropologists.

Language

This ...	is	shown exemplified illustrated	by	...

For example, For instance,	...

A key experiment	shows exemplifies illustrates	this.	...

This is shown by the following examples, The following are examples of this: The following is a case in point:	...

...	is a case in point.

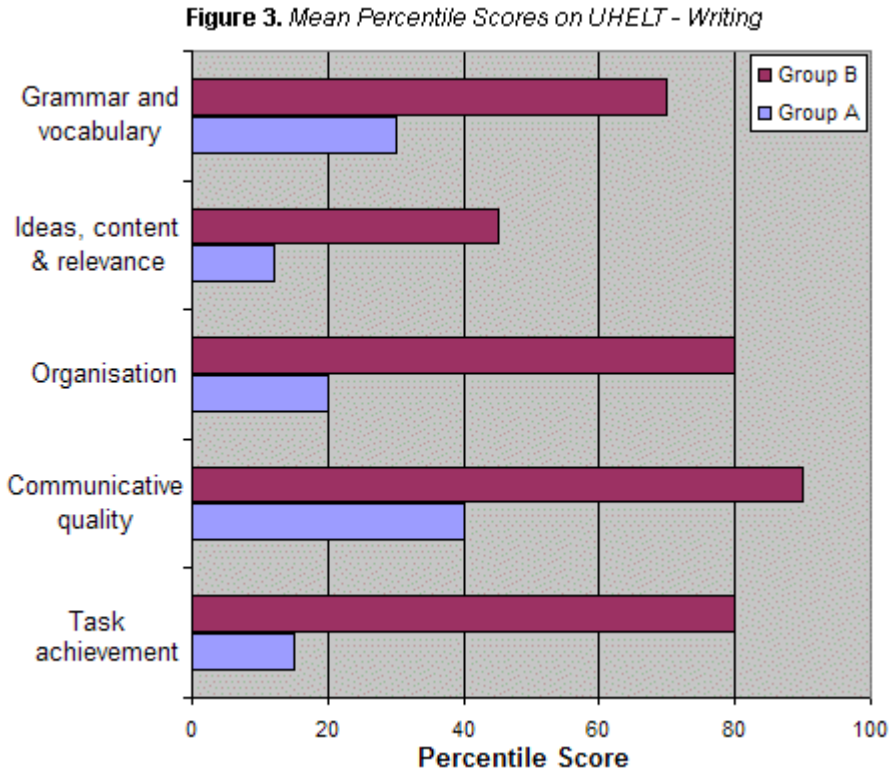
...	institutions	such as	the family	...

^

Including charts and diagrams

It is often useful when you are writing to include reference to tables and charts.

Make sure that every figure - use the word "Figure", or "Table", not "Chart" or "Diagram" - has a Number and a Title.



Examples

Example 1

Look at the following example:

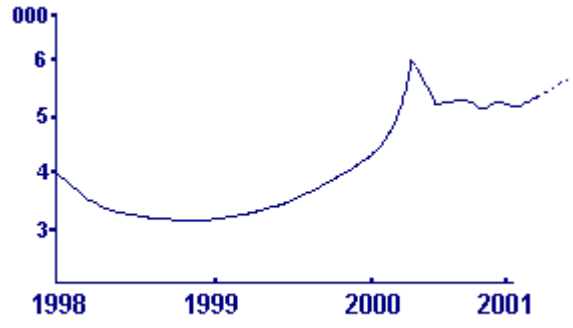


Figure 1. Sales of mobile phones per month

Figure 1 shows sales of mobile phones per month. As can be seen, it covers the years 1998 to 2001 and shows that the sales of mobile phones declined steadily in 1998, then remained steady from May until the end of the year. The sales rose more and more steeply, throughout 1999, with a steep increase at the end of the year, and reached a peak of 6,200 in February 2000. A sharp fall followed but sales levelled off at about 5,300 per month in April, fluctuated slightly through the year, and are now increasing again. The figures seem to indicate that we have recovered from the problems in mid-2000 and are on target to improve on our February 2000 peak by the end of 2002.

Usually in such cases, the writer does not simply add the visual to the text, but includes some sort of comment. Typically the writer will include (Swales & Feak, 1994):

- a few words that locate the visual,
- a statement that draws attention to the important features of the visual,
- some sort of comment on or discussion of the visual.

Example 2

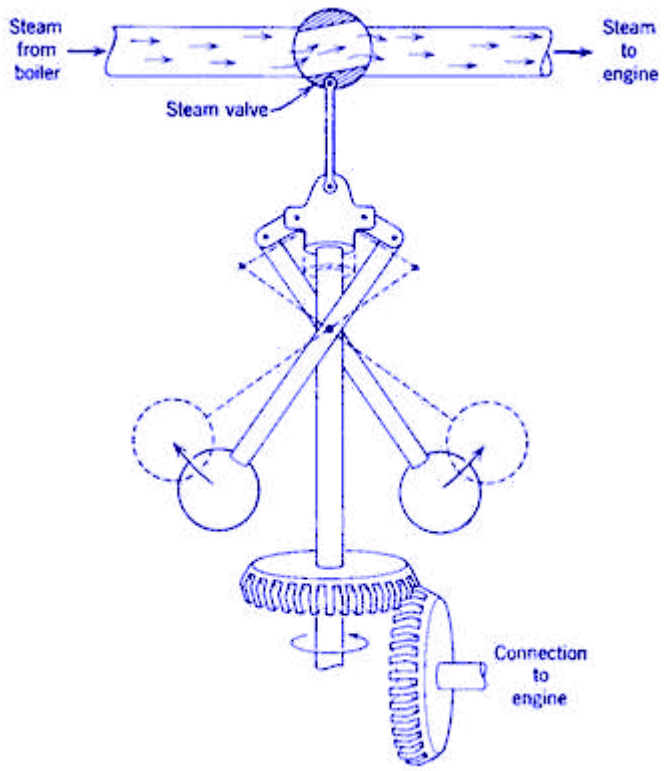


Figure 12-2 A flyball governor

As shown in Figure 12-2, the flyball governor is connected mechanically to the output shaft of a steam engine so that the ball mechanism rotates at the speed of the engine. If the load on the engine decreases, speed will tend to increase which, through centrifugal action, forces the balls outward. Through the linkage, this will proportionately close off the steam supply to the engine. If the engine tends to lose speed, the mechanism increases the steam supply accordingly. Therefore, the flyball governor maintains engine speed at a preset value without human intervention. This invention is significant in several respects. It is remarkable if for no other reason than it was so advanced for its time (the 1780s). Furthermore, it is a classic illustration of the elegant solution. Finally, it is widely recognized as an outstanding example of what engineers can do without the benefit of theory. The mathematical theory of the behavior of this governor did not appear until 1868

Example 3

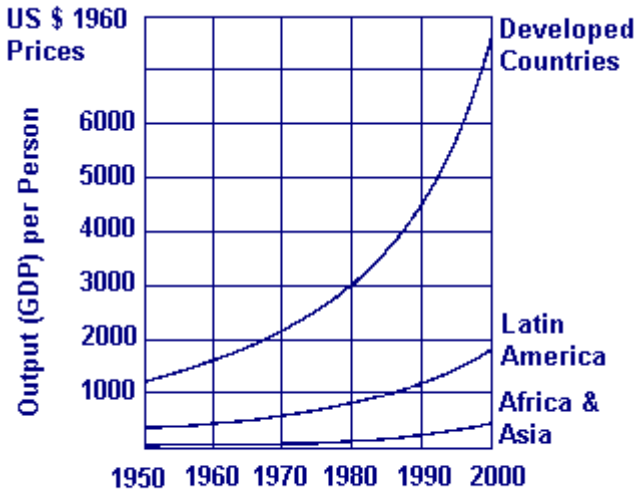


Figure 20-3. THE WIDENING GAP

About 70 percent of the world's population live in the less developed countries. What is more noteworthy about this situation is that the rate of economic growth of the developed countries exceeds the rate of economic growth of the underdeveloped countries, creating an ever-widening gap between the richest and poorest nations, as can be seen from the graph in Figure 20-3. Especially alarming in this regard is the fact that during the decade 1960-1970 agricultural output in the underdeveloped countries increased at an average annual rate of 2.7 percent per year while the population of these countries increased at an annual average rate of 2.8 percent (United Nations 1973), creating an absolute deterioration in their living standards.

(From: Marvin Harris, *Culture, people, nature: An introduction to general anthropology.* Harper, 1975)

Example 4

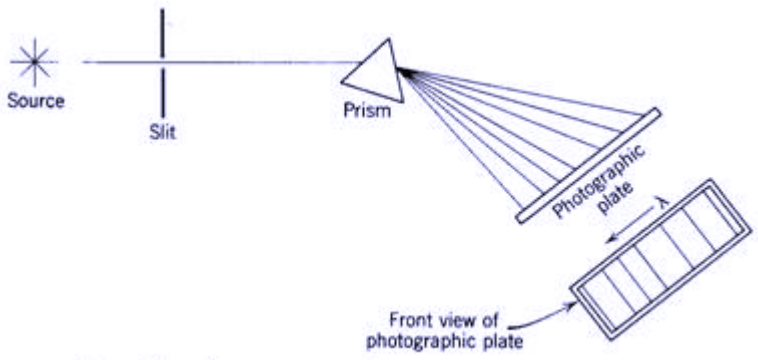
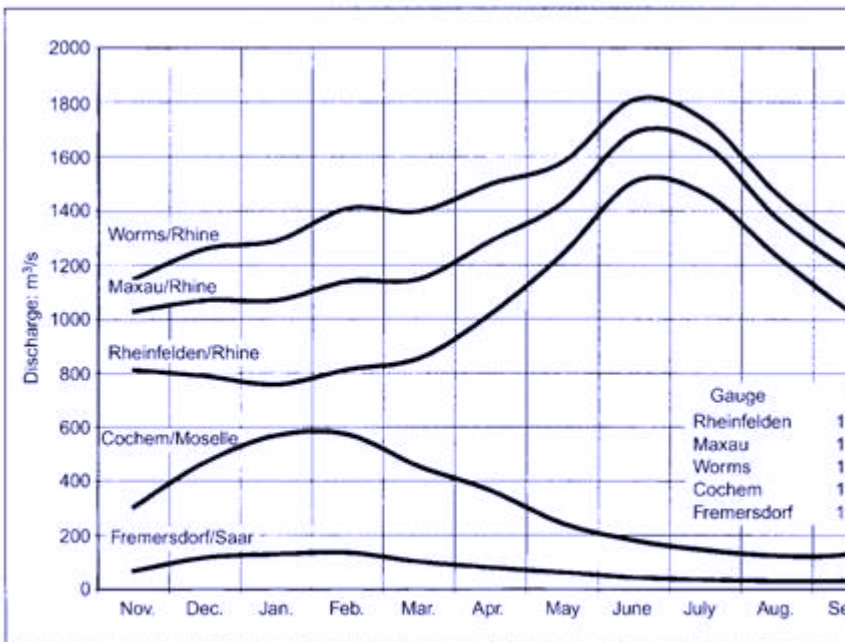


Figure 5–1. An apparatus used to measure atomic spectra.

A typical apparatus used in the measurement of atomic spectra is indicated in figure (5-1). The source consists of an electric discharge passing through a region containing a monatomic gas. Owing to collisions with electrons, and with each other, some of the atoms in the discharge are put into a state in which their total energy is greater than it is in a normal atom. In

	returning to their normal energy state, the atoms give up their excess energy by emitting electromagnetic radiation. The radiation is collimated by the slit, and then it passes through a prism (or diffraction grating), consequently breaking up into its spectrum, which is recorded on the photographic plate. (From: Robert Martin Eisberg, *Fundamentals of modern physics.* Wiley, 1961)

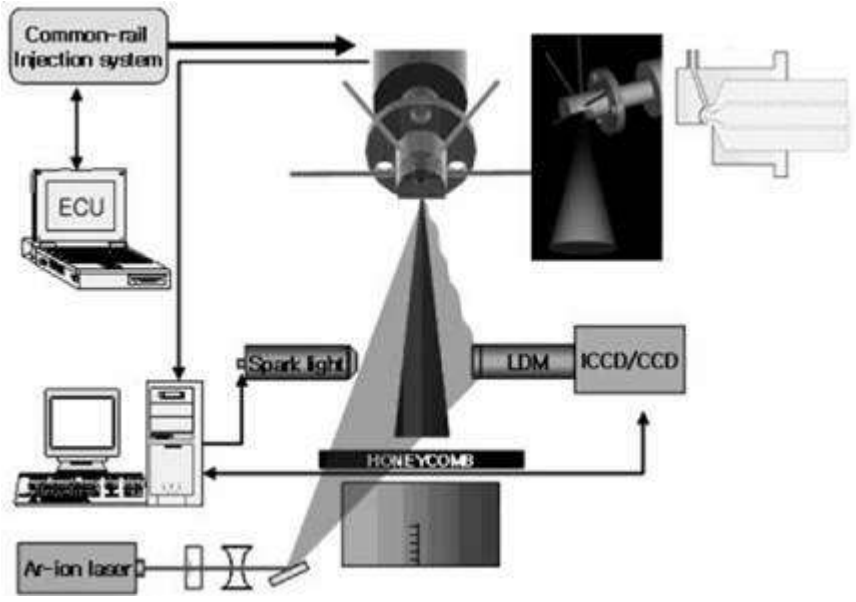
Example 5

 Fig. 2. Multi-annual monthly means of discharge-hydrographs of gauging-stations at U Moselle and Saar	Figure 2 shows long-term monthly means of discharge hydrographs of six gauging stations on the Upper Rhine, Moselle and Saar. These curves allow the respective increases in streamflow between the gauges to be derived due to inflowing tributaries. In the winter months these increases amount to some 300 m3/s between the gauges Rheinfelden and Maxau on the Upper Rhine. The crux of the matter, however, is the fact that the peaks of these flood waves in the tributaries are by

	far (up to 10 times) higher than the mean monthly discharge increases in the receiving river between these two gauges. Flashfloods in tributaries to the Rhine from the Black Forest and the Vosges Mountains characterise here the genesis of floods in the Rhine. Before river training, the peaks in the tributaries entered the Rhine about 1.5-2 days before the Rhine flood peaks arrived. A similar situation can be observed in the Moselle upstream of Trier, where the Upper Moselle, the Sauer, and the Saar come together. In both cases, typical patterns of flood genesis involve the risk that the impacts of river training on flood-runoff along the Upper Rhine, Moselle and Saar increases downwards of the rivers and are stronger there than immediately at the ends of the canalised reaches. (From: J. U. Belz, N. Busch, H. Engel and G. Gasber, Comparison of river training measures in the Rhine

	catchment and their effects on flood behaviour. *Proceedings of the Institution of Civil Engineers: Water and Maritime Engineering, 18*, 2001, pp. 123-132)

Example 6

 Fig. 1 Schematic diagram of experimental set-up for microscopic spray visualization	2 EXPERIMENTAL SET-UP To investigate the internal structure of transient diesel sprays from a five-hole VCO nozzle, a Bosch common-rail injection system equipped with a CP3 pump was used. A double-guided needle injector was also adopted to ensure the uniformity of the spray between the nozzle holes in the early stage of injection. The diameter of the nozzle exit was 0.144 mm. Using common-rail pressures of 39.5 MPa and 112 MPa, the sprays were injected, under atmospheric ambient conditions, to retard the completion of the break-up and to give easy optical access. Figure 1 shows the schematic diagram of the experimental set-up. The specially

	designed nozzle cap was mounted so as to face one of the five holes without the optical interference of neighbouring sprays [16]. The nozzle cap allowed only one spray from a hole open for observation, while it bypassed other sprays from four holes without disturbing injection performance. The injection velocity was calculated from the injection rate profiles measured with the Bosch tube method [17, 18]. Using a long-distance microscope and two illumination techniques, the development of the spray was microscopically visualized. First, a laser light sheet formed by an Ar-ion laser was aligned, through two cylindrical lenses to the centre of the spray, and the scattered light was imaged with an intensified charge-coupled device camera whose exposure time (gating time) was 70 ns. The dimensions of the visualized area were about 2 mm x 1.5 mm. Second, a backward illumination

	technique was applied with a spark light whose effective light duration was about 10 ns, and a high-resolution charge-coupled device camera was used for imaging. The field of view was about 1.2 mm x 1.0 mm. The characteristics of the optics were then calibrated with model particles that ranged in size from 4.8 to 45 am. Because of diffraction phenomena, the light intensity at the particle edge gradually changed. Therefore, the depth of field and the contrast of the small particle images were inferior to those of large particles. (From: Choongsik Bae and Jinsuk Kang, The structure of a break-up zone in the transient diesel spray of a valve-covered orifice nozzle. *International Journal of Engine Research, 7,* 2006, pp. 319-334)

Example 7

1-2 CLASSIFICATION OF FORCES

Force is one of the most important of the basic concepts in the study of mechanics of materials (or the mechanics of deformable bodies). Force is the action of one body on another; forces always exist in equal magnitude, opposite direction pairs. Forces may result from direct physical contact between two bodies, or from two bodies that are not in direct contact. For example, consider a person standing on a sidewalk. The person exerts a force on the sidewalk through direct physical contact between the soles of his or her shoes and the sidewalk; the sidewalk in turn exerts an equal magnitude, opposite direction force on the soles of the person's shoes. If the person were to jump, the contact force would vanish but there would still be a gravitational attraction (force between two bodies not in direct contact) between the person and the earth. The gravitational attraction force exerted on the person by the earth is called the *weight* of the person; an equal magnitude, opposite direction, attraction force is exerted on the earth by the person. Another type of force that exists without direct physical contact is an electromagnetic force.

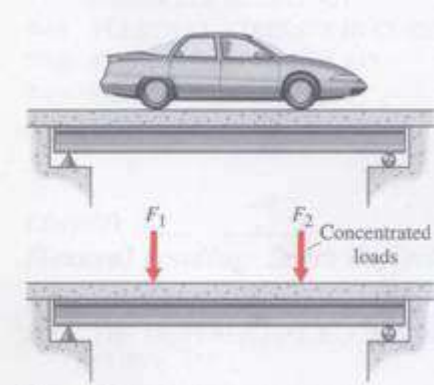


Figure 1-1

Contact forces are called *surface* forces, since they exist at surfaces of contact between two bodies. If the area of contact is small compared to the size of the body, the force is called a *concentrated* force; this type of force is assumed to act at a point. For example, the force applied by a car wheel to the pavement on a bridge (see Fig. 1-1) is often modeled as a concentrated force. Also, a contact force may be distributed over a narrow region in a uniform or non-uniform manner. This situation would exist where floor decking contacts a floor joist, as shown in Fig. 1-2a. Here, the floor decking exerts a uniformly distributed load(force) on the joist, as shown in Fig. 1-2b. The intensity of the distributed load is *w* and has dimensions of force per unit length.

Other common types of forces are external, internal, applied, and reaction. To illustrate, consider the beam loaded and supported, as shown in Fig. 1-3a. A free-body diagram of the beam is shown in Fig. 1-3b. All forces acting on the free-body diagram are *external* forces; that is, they represent the interaction between the beam (the object shown in the free-body diagram) and the external world (everything else that has been discarded). Force *F* is a concentrated force,

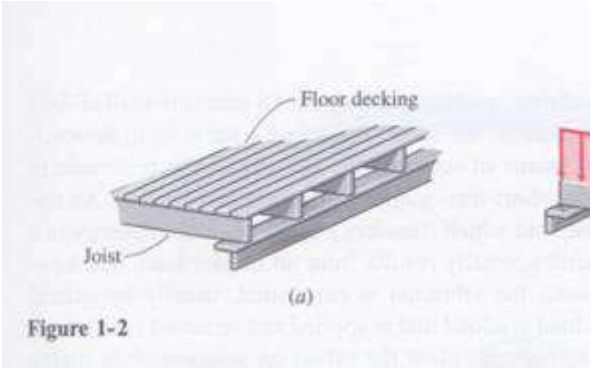


Figure 1-2

whereas w is a uniformly distributed load with dimensions of force/length. The forces F and w are called *applied* forces or loads. They are the forces that the beam is designed to carry. Forces A_x, A_y, and B are necessary to prevent movement of the beam. Such supporting forces are called *reactions*. Force distributions at supports are complicated, and reactions are usually modeled as concentrated forces.

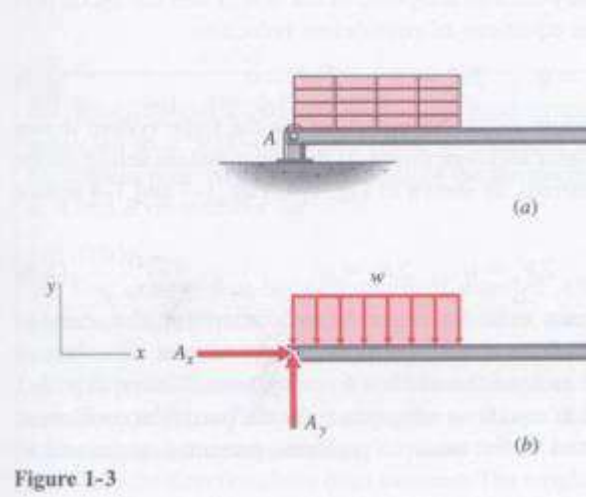


Figure 1-3

Once again, all the forces shown in Figure 1-3 are external forces. At every section along the beam, there also exists a system of equal magnitude, opposite direction, pairs of internal forces between the atoms on either side of the section. The study of mechanics of materials or mechanics of deformable bodies, depends on the calculation of these internal forces at various sections of a structure or machine element and how these forces are distributed over the sections.

(From: *Mechanics of materials*, William F. Riley, Leroy D. Sturges & Don H. Morris, Wiley, 1999)

Example 8

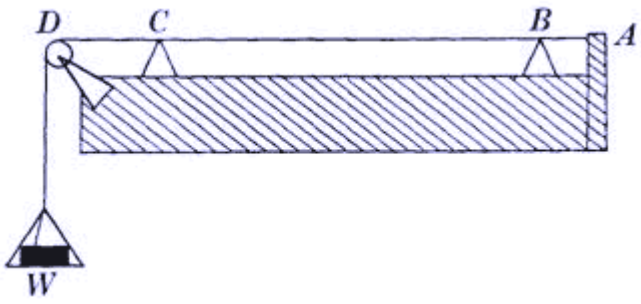


Fig. 22. The monochord

Experiments with the Monochord

Our source of sound will no longer be a tuning-fork but an instrument which was known to the ancient Greek mathematicians, Pythagoras in particular, and is still to be found in every acoustical laboratory - the monochord.

Its essentials are shown in fig. 22. A wire, with one end A fastened rigidly to a solid framework of wood, passes

	over a fixed bridge B and a movable bridge C, after which it passes over a freely turning wheel D, its other end supporting a weight W. This weight of course keeps the wire in a state of tension, and we can make the tension as large or small as we please by altering the weight. Only the piece BC of the string is set into vibration, and as the bridge C can be moved backwards and forwards, this can be made of any length we please. It can be set in vibration in a variety of ways - by striking it, as in the piano; by stroking it with a bow, as in the violin; by plucking it, as in the harp; possibly even by blowing over it as in the Aeolian harp, or as the wind makes the telegraph wires whistle on a cold windy day. (From: James Jeans, *Science and music.* Cambridge University Press, 1937)

Example 9

Saturation Water Vapour Density.

Considered from the point of view of the kinetic theory of matter, evaporation occurs because of the tendency for pure liquid water to establish a dynamic equilibrium with the water vapour concentration in the atmosphere in contact with it. At standard pressure and in a closed system, the equilibrium water vapour concentration over pure water will be at a specific partial pressure or the so-called saturation water vapour pressure. Table 1.2 shows that the saturation water vapour pressure increases with increasing temperature. At the critical temperature (in the case of water, 100°C), the vapour pressure of liquid water is the same as the saturation water vapour pressure of the atmosphere. The critical temperature for water at a pressure of 1 bar

is 100°C and, above the critical temperature for a given pressure, liquid water cannot exist.

Table 1.2. Saturation water vapour pressures (SWVP) and the corresponding saturation water vapour densities (SWVD) at different temperatures

	5°C	10°C	15°C	20°C	25°C	30°C	35°C
SWVP (mbar)	8.72	12.27	17.04	23.37	31.67	42.43	56.23
SWVD (g m^{-3})	6.74	9.39	12.83	17.30	23.00	30.38	39.63

(From: Hans Meidner & David W. Sheriff, *Water and plants*. Blackie, 1976)

Example 10

Table 2.6 illustrates clearly the extent to which the flora of selected islands now contain alien species, with the percentage varying between about one-quarter and two-thirds of the total number of species present.

Table 2.6. Alien plant species on ocean islands

Island	*Number of native species*	*Number of alien species*	*% of alien species in flora*
New Zealand	1200	1700	58.6
Campbell Island	128	81	39.0
South Georgia	26	54	67.5
Kerguelan	29	33	53.2
Tristan da Cunha	70	97	58.6
Falklands	160	89	35.7
Tierra del Fuego	430	128	23.0

(From: Andrew Goudie, *The human impact on the natural environment*. Basil Blackwell, 1981)

Example 11

Table 4.2 gives an example of an engineering curriculum. Such a curriculum does not tend to vary significantly among colleges and universities or engineering disciplines. Note that the curriculum described adheres to the requirements of ABET. That curriculum is based on the semester system. Many universities operate on the quarter system in which the academic year is divided into three periods of about 12 weeks duration. A quarter-based-curriculum would of course be "packaged" differently but would be similar to one based on the semester system.

Table 4.2 Typical Freshman Engineering Curriculum

	Semester Hours Credit	
Freshman Year Courses	**1st Semester**	**2nd Semester**
CHEM 101 - General Chemistry	4	-
CHEM 102 - General Chemistry	-	4
MATH 120 - Calculus and Analytical Geometry	5	-
MATH 132 - Calculus and Analytical Geometry	-	3
Elective in Social Science or Humanities	3	3
GE 103 - Engineering Graphics	3	-
RHET 105 - Principles of Composition	-	4
ENG 100 - Engineering Lecture	0	-
CE 195 - Introduction to Engineering	-	0
PHYSICS 106 - General Physics (Mechanics)	-	4
TOTALS	**15**	**15**

(From: Paul H Wright, *An introduction to engineering*. Wiley, 1989)

Example 12

Most programming languages require that a declarative statement that introduces a variable also specify the type of data that will be referenced by that variable. Figure 5.5 gives examples of such declarative statements in Pascal, C, C++, Java, and FORTRAN. In each case the variables `Length` and `Width` are declared to be of type real, and `Price`, `Tax`, and `Total` are declared to be of type integer. Note that C, C++, and Java use the term float to refer to the type real, since data of this type are represented in floating-point notation.

Variable declarations in Pascal

```
var
  Length, width:      real;
  Price, Tax, Total:  integer;
```

Variable declarations in C, C++, and Java

```
float Length, Width;
int Price, Tax, Total;
```

Variable declarations in FORTRAN

```
REAL Length, Width
INTEGER Price, Tax, Total
```

Figure 5.5 Variable declarations in Pascal, C, C++, Java, and FORTRAN

(From: J. Glenn Brookshear, *Computer science: An overview.* Addison-Wesley, 1997)

Example 13

1-3 EQUILIBRIUM OF A RIGID BODY

A *rigid* body (a body that does not deform under the action of applied loads) is in equilibrium when the resultant of the system of forces acting on the body is zero. This condition is satisfied if

$$\Sigma \mathbf{F} = \mathbf{0} \qquad (1\text{-}1)$$

$$\Sigma \mathbf{M}_O = \mathbf{0} \qquad (1\text{-}2)$$

Equation 1-1 states that the vector sum of all external forces acting on the body is zero, whereas Eq. 1-2 states that the vector sum of the moments of the external forces about any point O (on or off the body) is zero. Equations 1-1 and 1-2 are the necessary and the sufficient conditions for equilibrium of a rigid body. The two vector equations of equilibrium may be written as six scalar equations. Selecting a right-handed, xyz-rectangular coordinate system, the equations of equilibrium may be written

$$\Sigma F_x = 0 \qquad \Sigma F_y = 0 \qquad \Sigma F_z = 0 \qquad (1\text{-}3)$$

$$\Sigma M_x = 0 \qquad \Sigma M_y = 0 \qquad \Sigma M_z = 0 \qquad (1\text{-}4)$$

Equation 1-3 states that the sum of all external forces acting on the body in the x-, y-, and z-directions is zero. Equation 1-4 states that the sum of the moments of all of the external forces acting on a body about the x-, y-, and z-axes is zero. Many problems encountered in mechanics of materials are two-dimensional in nature. Selecting the x- and y-axes in the plane of the forces and the z-axis perpendicular to the plane, the equations of equilibrium reduce to

$$\Sigma F_x = 0 \qquad \Sigma F_y = 0 \qquad \Sigma M_z = 0 \qquad (1\text{-}5)$$

(From: *Mechanics of materials*, William F. Riley, Leroy D. Sturges & Don H. Morris, Wiley, 1999)

Example 14

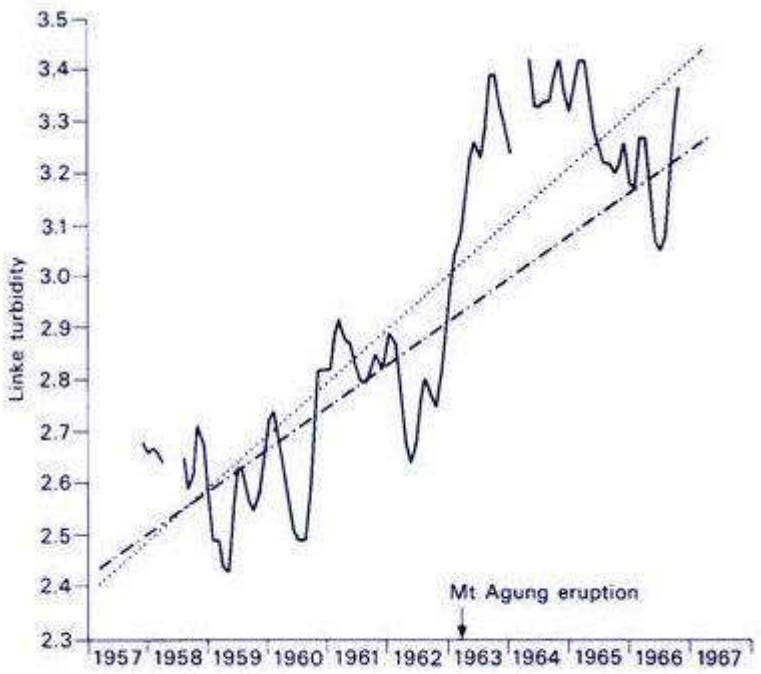


Figure 7.6
Increasing turbidity at Mauna Loa Observatory

Figure 7.6 shows that the average turbidity factor for the atmosphere (Linke turbidity) has increased by 30 per cent in a decade (the dot-and-dash line). It also shows the effect of a natural source of turbidity, the Mount Agung (Bali) eruption of 1963 (the single, continuous line). In the figure the dotted line represents the linear trend for the same period if the effects of the eruption are excluded from the computations.

(From: Andrew Goudie, *The human impact on the natural environment*. Basil Blackwell, 1981)

Example 14

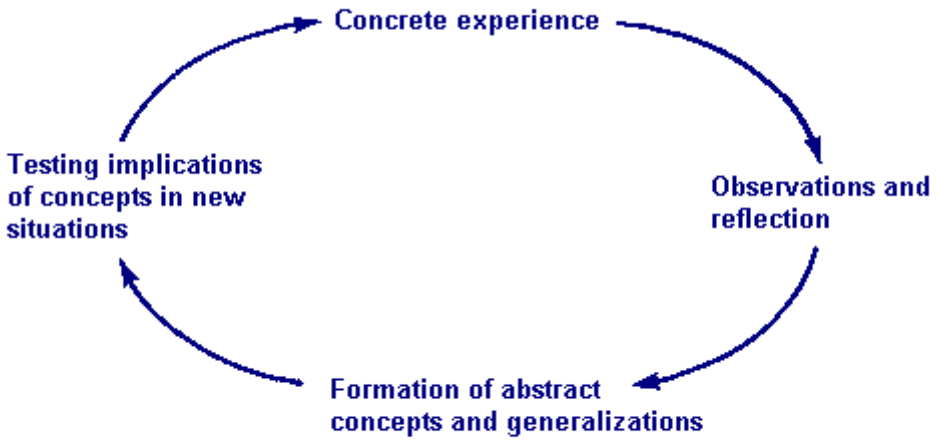


Figure 2.1 The Lewinian Experiential Learning Model

The Lewinian Model of Action Research and Laboratory Training

In the techniques of action research and the laboratory method, learning, change, and growth are seen to be facilitated best by an integrated process that begins with here-

and-now experience followed by collection of data and observations about that experience. The data are then analyzed and the conclusions of this analysis are fed back to the actors in the experience for their use in the modification of their behavior and choice of new experiences. Learning is thus conceived as a four-stage cycle, as shown in Figure 2.1. Immediate concrete experience is the basis for observation and reflection. These observations are assimilated into a "theory" from which new implications for action can be deduced. These implications or hypotheses then serve as guides in acting to create new experiences.

(From: David A.Kolb, *Experiential learning.* Prentice Hall, 1984)

Example 15

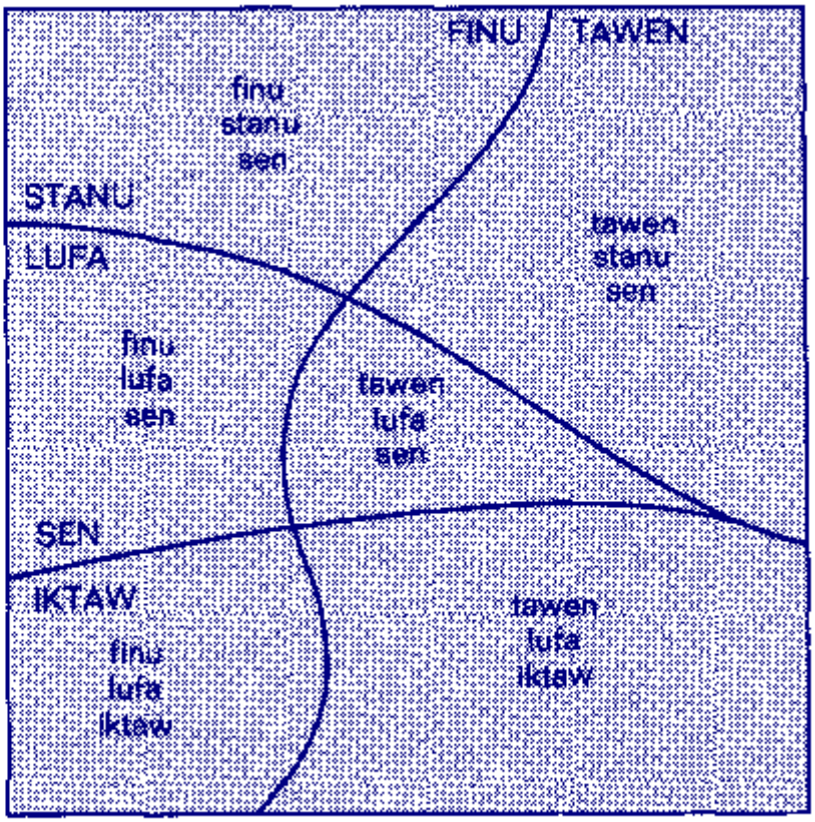


figure 3.3

Linguists use the term **isogloss** to refer to the geographical boundary of a linguistic trait. Even within a relatively homogeneous speech area, quite a large number of isoglosses can be traced. 'lucre is no necessary relation between any one isogloss and any other; they crisscross and diverge and often present a rather bewildering picture.

Figure 3.3 is a conceivable linguistic map on which three isoglosses are marked. The linguistic traits in question arc lexical ones. Sonic speakers call a certain sparrow-like bird found in the region ***finu***; others use the word ***tawen*** to designate this kind of

bird. The isogloss running vertically demarcates roughly the subareas characterized by these alternate lexical items - speakers to the left of this line in general use ***finu***, while those to the right use ***tawen***. Similarly, the ***stanu/lufa*** and the ***sen/iktaw*** isoglosses indicate the extensions of the use of alternate lexical items.

The three isoglosses divide the region represented in Figure 3.3 into six subregions, each of which is distinct from the other five. In one subregion, speakers use ***finu***, ***stanu***, and ***sen***; in another they use ***tawen***, ***stanu***, and ***sen***. Where, then, is there a dialect boundary? There is really no satisfactory answer to this question. Dialect boundaries are established on the basis of different linguistic traits, but the three linguistic traits indicated in Figure 3.3 contradict one another as to where a dialect boundary lies. The dividing line will be drawn in one place if the criterion is the ***finu/tawen*** distinction, in another if it is the ***stanu/lufa*** alternation, and in still another if it is the ***sen/iktaw*** distinction. If we added more isoglosses to Figure 3.3, the situation would be worse yet.

One way out of the difficulty is to say that six dialect areas are represented in Figure 3.3, not two. In other words, we can define a dialect in such a way that two people speak different dialects if their linguistic systems differ with respect to at least one trait. Thus a person from the ***finu/lufa/sen*** area speaks a different dialect from the one spoken by a person from the ***tawen/lufa/sen*** area, since one person uses ***finu*** while the other uses ***tawen***.

(From: Ronald W. Langacker, *Language and its structure,* Harcourt, Brace, Jovanovich, 1967)

Example 16

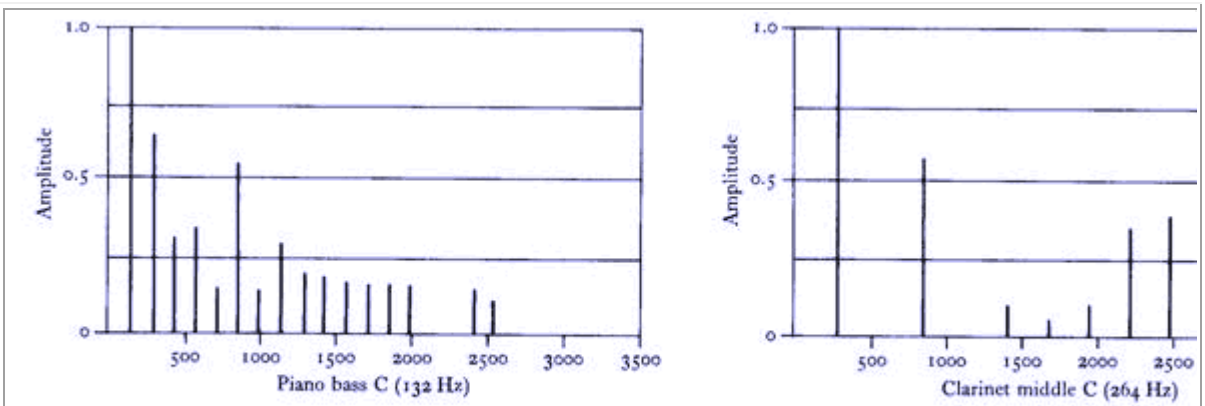


Fig. 26. Spectra of piano and clarinet tones.

One form in which sound spectra are often shown is illustrated in Fig. 26. Frequencies are set out on the horizontal scale in hertz. The relative amplitude of the components is given with reference to the vertical scale; the component with the greatest amplitude is given the value 1.0 and the amplitude of all other components is expressed as a proportion of this value. Wherever a vertical line is drawn, there is a

component of that frequency present in the mixture with the amplitude indicated; at all other frequencies there is zero sound energy. The two examples are the bass C of the piano, one octave below middle C, with a fundamental frequency of 132 Hz and middle C played on the clarinet, fundamental 264 Hz. In each case any components represented in the spectrum must be in the harmonic series and consecutive harmonics will appear at an interval equal to the fundamental frequency. In the piano note consecutive harmonics occur over a wide frequency range and since the fundamental is low they appear close together. The fundamental of the clarinet note is an octave higher and therefore the distance between consecutive harmonics is doubled. It is only from about 1500 Hz upwards that consecutive harmonics appear in the clarinet tone ; the second and fourth harmonics have zero amplitude. There are major differences in the mechanisms for generating sound in the piano and the clarinet : the piano tone is the result of free vibrations of the piano string which is struck by a hammer while the air column of the clarinet is performing forced vibrations in response to the continued vibration of the reed and does not show the rapid damping of the sound which is so characteristic of the piano. Nonetheless the differences in spectrum which appear in Fig. 26 are largely responsible for the difference in sound quality which we hear between the two instrument

(From: D. B. Fry, *The physics of speech,* Cambridge University Press, 1979)

Example 17

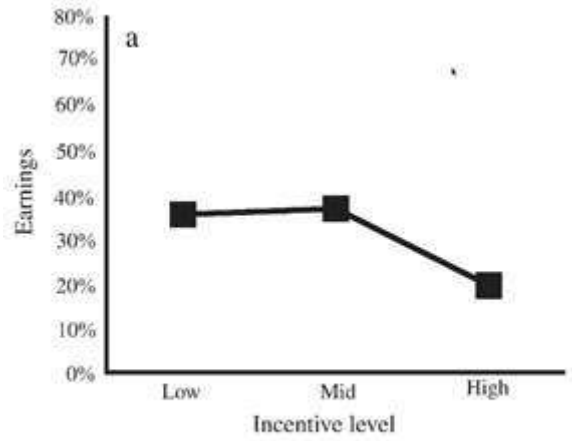


FIGURE 1
Means of the share of earnings relative to the maximum possible earnings for the three payment levels.

As can be seen in Figure 1(a), the aggregated performance levels across all six games (measured as the average fraction of maximum possible earnings) shows that relatively high monetary incentives can have perverse effects on performance. The average share of earnings relative to maximum possible earnings was lowest in the high payment condition (M = 19·5%, S.D. = 30·3), but higher and almost equal in the mid (M = 36·7%, S.D. = 40·1) and low payment conditions (M = 35·4%, S.D. = 42·5).

(From: Ariely, D., Gneezy, U., Loewenstein, G & Mazar, N. ((2009). Large stakes and big mistakes. *The Review of Economic Studies, 76*, 451-469.)

Example 18

Table 1. Previous knowledge/experience of respondents.

	Previous knowledge/experience factors	Agree (%)	Disagree (%)	Mean	SD
1	Good understanding of how business works	40	17	4.33	0.99
2	Good understanding of subject matter	33	21	4.15	1.03
3	Lot of experience of group work	55	18	4.72	1.40
4	Good level of subject-related skills	52	18	4.80	1.44
5	Experience in writing reports	39	23	4.29	1.30

Students were asked to rate their existing knowledge and experience of business, the subject and group work. A summary of the students' reponses is iven in Table 1. In summary, 40% of the repondents reported good understanding of how business works, 55% of the students reported some experience in group work and 39% reported some experience in writing reports. Regarding subject knowledge, 33% of the respondents have good theoretical understanding, while 52% reported subject related skills.

(From: Seethamraju, R. & Borman, M. (2009). Influence of group formation choices on academic performance. *Assessment and Evaluation in Higher Education, 34,* 31-40.)

Example 19

Table 2. Pearson Correlation Coefficients (*r*).

	College GPA	High school GPA	SE:SRL	SE:AA
High school GPA	.611***			
SE:SRL	.341***	.242***		
SE:AA	.200***	.275***	.456***	
Cell phone use	−.234***	−.168***	−.090*	−.239***

Note. GPA = grade point average; SE:SRL = self-efficacy for self-regulated learning; SE:AA = self-efficacy for academic achievement.
*p < .05. ***p < .001.

Table 2 illustrates the results of Pearson's correlations. There are several significant correlations worth noting. There was a significant, negative correlation between cell phone use and college GPA ($p < .001$). There was a significant, positive correlation between both measures of self-efficacy (SE:SRL, SE:AA) and college GPA ($p < .001$). There was a significant, negative correlation between both measures of self-efficacy (SE:SRL, SE:AA) and cell phone use ($p \leq .041$). Finally, high school GPA was significantly and positively correlated with college GPA ($p < .001$).

(From: Lepp, A., Barkley, J. E. & Karpinsky, A. C. (2015). The relationship between cell phone use and academic performance in a sample of U. S. college students. *SAGE Open, 2015,* 1-9.)

Example 20

Table 3. The results of independent samples T-test in terms of comprehensible input and vocabulary score

High school	Group	N	Mean	Std. Deviation	T-value	P-value
Comprehensible input	Control group	42	5.4048	2.16468	11.244	0.000
	Experimental group	56	9.3750	1.31512		
Vocabulary score	Control group	42	2.1667	1.54473	9.172	0.000
	Experimental group	56	5.8393	2.22201		
College school	Group	N	Mean	Std. Deviation	T-value	P-value
Comprehensible input	Control group	38	5.0000	.00000[a]	*	*
	Experimental group	42	5.0000	.00000[a]		
Vocabulary score	Control group	38	2.1579	1.44309	4.800	0.000
	Experimental group	42	3.7143	1.45310		

* T cannot be computed because the standard deviations of both groups are 0.

Table 3 shows that in the high school groups, there is a significant difference between the control group and the experimental group in terms of comprehensible input and vocabulary score, with P value being 0.000<0.05, The experimental group (mean=9.3750) outperforms the control group (mean=5. 4048) in both comprehensible input and vocabulary score. However, it is not the same case with the groups of the college school. It is found that there is no significant difference between the control group and the experimental group in terms of comprehensible input because the value of comprehensible input is constant (mean=5.0000) and t-value can not be computed at all, whereas, a significant difference can be seen in vocabulary score between the control group and the experimental group (P=0. 000<0.05). The experimental group (mean=3.7143) outperforms the control group (mean=2.1579).

(From: Yi, B. & Sun, Z. (2013). An Empirical Study of the Effectiveness of Negotiation of Meaning in L2 Vocabulary Acquisition of Chinese Learners of English. *English Language Teaching, 6*(10), 120-131)

Language

Referring to a diagram, chart etc.

As can be seen	from in	the	chart, diagram, table, graph, figures, statistics,	…
It can be seen We can see				that ...

...	can be seen is shown	from in	the	chart. diagram. table. graph. figures. statistics.

As can be seen	from in	Table 1, Figure 2,	...
It can be seen We can see			that

From	Table 1 Figure 2		it	can may	be	seen concluded shown estimated calculated inferred	that ...
	the	figures chart diagram					

The graph Figure 1 Graph 2	shows	that ...

Describing change

There was a(n) (very)	barely noticeable slight slow gradual steady marked dramatic steep sharp rapid sudden	rise. increase. upward tend.
		fluctuation.
		downward trend. decrease. decline. reduction. fall. drop.

There was a(n)	rise increase	of	...

	decrease decline reduction fall drop		

X	increased shot up grew rose	by	...
	declined reduced decreased dropped fell		

X	increased shot up grew rose	slightly slowly gradually steadily
	declined reduced decreased dropped fell	markedly dramatically steeply sharply rapidly suddenly

X	reached a peak. levelled off

Note:

It is usual in English to write, for example, "Inflation increased by 8% last year", not "Inflation was increased by 10%". See: Proof Reading: Ergative Verbs for more information.

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Critical

Writing critically

Introduction

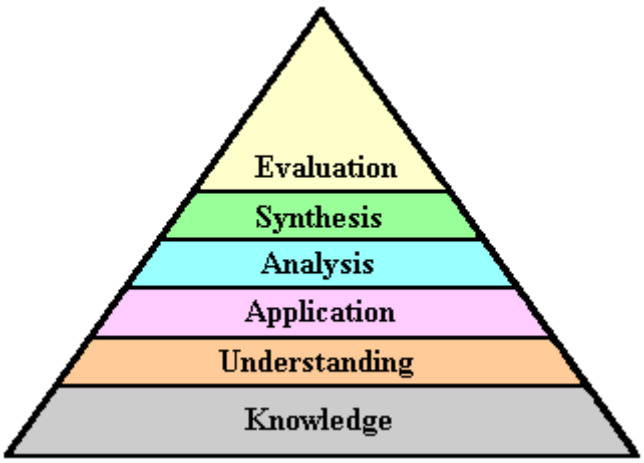
It is important to be able to write decriptively. You need to be able to define, describe, categorise and narrate. However, it is not enough for work in higher education. In the words of Nash (1990, p. 10),

The student who gives only the facts, with no assessment or interpretation, gets poor marks.

Therefore, as well as writing descriptively, you need to be able to write critically. As well as giving the facts, you need to be able to make use of these facts to come to general conclusions. These conclusions need to be justified and supported by evidence. You also need to be aware of other points of view that exist and this must be dealt with. So you need to describe other people's points of view and compare and contrast them with your own, stating their advantages and disadvantages. In this way you can analyse and evaluate your work and others and come to a balanced conclusion.

Bloom's Taxonomy

In 1956, Benjamin Bloom of the University of Chicago developed a classification of levels of intellectual behaviour which is considered important in learning. Bloom identified six levels within the cognitive domain, from the simple recall or recognition of facts, as the lowest level, through increasingly more complex and abstract levels, to the highest level which is classified as evaluation. Most university level writing needs to involve writing at this high level.



The six categories are listed below. The categories can be thought of as degrees of difficulty. That is, the first one must be mastered before the next one can take place (Bloom, 1956, pp. 201-207).

Category	*Key Words*	*Associated Questions*	*Typical Question Instructions*
Evaluation: Makes judgements about the value of ideas or materials for a given purpose in a given context. Presents and defends opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria. Compares and discriminates between ideas. Recognises subjectivity.	e.g. appraises, compares, concludes, contrasts, criticises, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarises, supports.	Do you agree with the actions/outcomes ...? What is your opinion of ...? How would you prove/disprove ...? Evaluate the outcome....	advise assess estimate evaluate judge rate recommend
Synthesis: Puts parts together to form a whole, with emphasis on creating a new meaning or structure. Combines information together in a different way by putting elements together in a new pattern or	e.g. categorises, combines, compiles, composes, creates, devises, designs, explains, generates, modifies, organises, plans, rearranges, reconstructs, relates, reorganises, revises, rewrites, summarises, tells, writes.	What changes would you make to solve ...? What would happen if ...? Can you elaborate on the reason ...?	arrange compose construct create design formulate manage organise plan prepare set up

proposing alternative solutions. Generalises from facts.			
Analysis: Examines and breaks information into parts by identifying motives or causes; making inferences and finding evidence to support generalisations. Includes analysis of elements, relationships and organisational principles. Recognises hidden meanings. Distinguishes between facts and inferences.	e.g. analyses, breaks down, compares, contrasts, diagrams, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates.	What are the parts or features of ...? How is _____ related to ...? Can you show connection between ...? How would you compare/contrast ...?	analyse calculate categorise compare contrast criticise debate differentiate discuss distinguish examine experiment inspect question relate solve test
Application: Uses a concept in a new situation. Applies what was learned in the classroom into novel situations. Applies general ideas to concrete situations. Applies what is discussed in one paper to another paper. Predicts	e.g. applies, changes, computes, constructs, demonstrates, discovers, manipulates, modifies, operates, predicts, prepares, produces, relates, shows, solves, uses.	How would you use ...? What examples can you find to ...? Can you relate this information to the present situation?	apply demonstrate dramatise employ illustrate interpret operate practice schedule sketch use

probable effects. Solves problems by applying acquired knowledge, facts, techniques and rules in a different way.			
Comprehension: Demonstrates understanding of facts and ideas by organising, comparing, translating, interpreting, giving descriptions and stating main ideas. States a problem in own words. Knows what is being communicated and can make use of materials or ideas without necessarily relating it to other materials or seeing further implications. It includes: translation of verbal material into symbolic statements; interpretation of data; extrapolation - trends and tendencies.	e.g. comprehends, converts, defends, distinguishes, estimates, explains, extends, generalises, gives examples, infers, interprets, paraphrases, predicts, rewrites, summarises, translates.	How would you classify the type of ...? What was the text about? Can you summarise the author's point of view?	classify describe distinguish explain express identify illustrate locate recognise report restate review tell translate

Knowledge: Recalls data or information. Shows knowledge of previously learned material by recalling facts, terms, basic concepts and answers. Has knowledge of specific facts & terminology; knowledge of ways and means - conventions, trends and sequences, classifications and categories, criteria, methodology; knowledge of universals and abstractions - principles & generalisations, theories and structure.	e.g. defines, describes, identifies, knows, labels, lists, matches, names, outlines, quotes, recalls, recognises, reproduces, selects, shows, states.	What is ...? How is ...? Where is ...? When did _____ happen?	define list name recall record relate repeat state underline

Writing critically means writing at the highest levels. Therefore, in most academic writing it is important to analyse and evaluate. Simple description is usually not enough (Woodward-Kron, 2002).

This means making connections between theory and practice, drawing links between theories, as well as evaluating theories and research. It means giving your opinions (positive and negative) on the work of others and your own opinions based on what you have learned. Critical evaluation requires you to evaluate arguments, weigh evidence and develop a set of standards on which to base your evaluation.

When writing critically, you need to:

- Analyse and categorise theories and research
- Evaluate theories and research
- Compare and contrast theories and research
- Select from theories and research
- Synthesise from theories and research
- Make logical connections between theory and practice
- Give opinions (positive and negative)
- Provide evidence for these opinions
- Indicate gaps in theories and research
- Weigh evidence and come to conclusions

NB: Some subjects accept stronger criticism than others - find out about your own subject.

Example

Read the following example: Example 1.

Exercise

Try this exercise: Exercise 1

Further details

As well as writing descriptively, you need to be able to write critically; you need to be able to make use of these facts to come to general conclusions. These conclusions need to be justified and supported by evidence. You also need to be aware of other points of view that exist and these must be dealt with. So you need to describe other people's points of view and compare and contrast them with your own, stating their advantages and disadvantages. In this way you can analyse and evaluate your work and others and come to a balanced conclusion. The following may be useful:

- **Reading critically**

It is important to read critically. Critical reading requires you to evaluate the arguments in the text. You need to distinguish fact from opinion, and look at arguments given for and against the various claims.

See: Reading critically

- **Reporting**

One of the most important aspects of academic writing is making use of the ideas of other people. This is important as you need to show that you have

understood the materials and that you can use their ideas and findings in your own way.

See: Reporting

- **Arguing and discussing**

You need to be able to make use of facts to come to general conclusions. You need to argue and discuss.

See: Arguing and discussing

- **Evaluating other points of view**

You need to be aware that other points of view exists and deal with this.

See: Evaluating other points of view

- **Application**

  One thing that you learn in highereducation is how to apply what you are learning to the real world. It is an essential part of writing ctitically as defined by Bloom.

  See Application

  Comparing & Contrasting

When you are working with other people's ideas, you will compare and contrast the different ideas and your own, discussing advantages and disadvantages.

See: Comparing and contrasting

- **Synthesising**

You will need to summarise other people's ideas, combine them and come to conclusions.

See: Reporting - paraphrase, summary & synthesis: Synthesis

- **Generalising**

In most cases, the conclusions you come to and the points of view you hold will be qualified and generalisations will be made.

See: Generalising

- **Expressing degree of certainty**

You may also have different degrees of certainty about your claims.

See: Expressing degree of certainty

- **Providing support**

You need to provide evidence to support your points of view and conclusions.

See: Providing support

- **Supporting an argument: Illustrating and exemplifying ideas**

You can use examples to support your conclusions.

See: Giving examples

- **Giving reasons and explanations**

And you will always give reasons and explanations for your claims and points of view.

See: Reasons and explanations

- **Working with different voices**

You need to recognise and work with other people's points of view. Within all these opinions, you need to make yours clear.

See: Working with different voices

- **Taking a stance**

You need to make sure that your point of view shows through clearly.

See: Taking a stance

- **Drawing conclusions**

At various stages during your writing, you will need to sum up your argument and come to a conclusion.

See: Drawing conclusions

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Arguing and discussing

Introduction

An essential part of critical writing is arguing and discussing.

In academic writing, arguing and discussing is often part of a larger piece of writing. In arguing and discussing, you are expected to present two or more points of view and discuss the positive and negative aspects of each case. On the basis of your discussion, you can then choose one point of view and persuade your readers that you are correct. This means giving your opinions (positive and negative) on the work of others and your own opinions based on what you have read and learned. You need to evaluate arguments, weigh evidence and develop a set of standards on which to base your conclusion.

As always in academic writing, all your opinions must be supported - you should produce your evidence and explain why this evidence supports your point of view. It is important to distinguish between (see Toulmin, 1958):

- **your claim** (proposition, thesis, point, position) - your point of view, what you believe;
- **your reason(s)** (explanations)- why you believe what you do;
- **your evidence** (support or grounds) - the facts, data and examples that support your point of view; and
- **your argument** (warrant) - how the evidence you have provided leads to the claim your are making.

A simple example would be:

- **your claim** e.g. John is a good teacher;
- **your reasons** e.g. He gets on well with his students;
- **your evidence** e.g. I have seen him in class.
- **your argument** Good rapport with students is essential for a good teacher.

There are two main methods of presenting an argument, and in general the one you choose will depend on exactly your task (See Understanding the question and Organising the answer for more information).

Presenting an argument

a. The balanced view

In this case you present both sides of an argument, without necessarily committing yourself to any opinions, which should always be based on evidence, until the final paragraph.

At its simplest your plan for writing will be as follows:

Introduce the argument to the reader. e.g. why it is a particularly relevant topic nowadays or refer directly to some comments that have been voiced on it recently.

Reasons against the argument State the position, the evidence and the reasons.

Reasons in favour of the argument. State the position, the evidence and the reasons.

After summarising the two sides, state your own point of view, and explain why you think as you do.

b. The persuasive view

This second type of argumentative writing involves stating your own point of view immediately, and then trying to convince the reader by reasoned argument that you are right. The form of the piece of writing will be, in outline, as follows:

Introduce the topic briefly in general terms, and then state your own point of view. Explain what you plan to prove in the essay.

Reasons against the argument.

Dispose briefly of the main objections to your case. Provide evidence and your reasons.

Reasons for your argument

the arguments to support your own view,

with evidence, reasons and examples.

Conclusion - Do not repeat your opinion again.

End your essay with something memorable

e.g. a quotation or a direct question.

Example

Read the following examples: Example 1, Example 2.

Exercise

Try this exercise: Exercise 1

Language

Presenting own point of view

There are many reasons why …

It is	important true necessary essential	to	remember bear in mind point out	that	…

The first thing First of all,	we have I would like	to consider	is	…

The first thing to be considered is

It is a fact There is no doubt I believe	that	…

The first reason why … is …

First of all, …

The second reason why … is …

Secondly, …

The most important …

In addition, …

Furthermore, …

What is more, …

Besides, …

Another reason is …

A further point is …

Further details

- **Evaluating other points of view**

  You will also need to present and evaluate other people's points of view.

  See: Evaluating other points of view

- **Providing support**

You need to provide evidence to support your points of view and conclusions.

See: Providing support

- **Illustrating and exemplifying ideas**

You can use examples to support your conclusions.

See: Giving examples

- **Giving reasons and explanations**

And you will always give reasons and explanations for your claims and points of view.

See: Cause & effect

- **Working with different voices**

As you recognise and work with other people's points of view. Within all these opinions, you need to make yours clear.

See: Working with different voices

- **Synthesising**

You will need to summarise other people's ideas, combine them and come to conclusions.

See: Reporting - paraphrase, summary & synthesis

- **Taking a stance**

You need to make sure that your point of view shows through clearly.

See: Taking a stance

- **Comparing & contrasting**

You will compare and contrast differenet ideas and your own, discussing advantages and diasadvantage.

See: Comparing and contrasting

- **Generalising**

In all cases, points of view may be qualified and generalisations may be made.

See: Generalising

- **Expressing degree of certainty**

You may also have different degrees of certainty about your claims.

See: Expressing degree of certainty

- **Drawing conclusions**

At various stages during your argument, you will need to sum up and come to a conclusion.

See: Drawing conclusions

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Evaluating points of view

Introduction

An essential part of critical writing is arguing and discussing and evaluating points of view and research findings.

When you argue, you need to present your points of view and deal with different points of view. You often need to present two or more points of view and discuss the positive and negative aspects of each case; you need to evaluate them. These other points of view will often come from your reading. On the basis of your evaluation, you can then choose one point of view and persuade your readers that you are correct. This means giving your opinions (positive and negative) on the work of others that you have read and learned.

Evaluation is the top of Bloom's pyramid and is central to academic criticality.

Evaluation:

- Makes judgements about the value of ideas or materials for a given purpose in a given context.
- Presents and defends opinions by making judgments about information, validity of ideas or quality of work based on a set of criteria.
- Compares and discriminates between ideas.
- Recognises subjectivity.

Typical verbs associated with evaluation are: appraises, compares, concludes, contrasts, criticises, critiques, defends, describes, discriminates, evaluates, explains, interprets, justifies, relates, summarises, supports.

Typical assignment questions/briefs associated with evaluation are:

- Do you agree with the actions/outcomes ...?
- What is your opinion of ...?
- How would you prove/disprove ...?
- Evaluate the outcome....

Wne you are evaluting, first you need to present another point of view, perhaps by paraphrasing or summarising from your reading. You then need to evaluate it, either negatively or positively

Examples

Read the following examples how notice how the points of view are evaluated.

> Eccleshall argues that libertarian Conservatism was alive and well in the work of Edmund Burke and in the 'Liberal Toryism' which reached its high point during the premiership of Sir Robert Peel. Yet, as recent work on political economy in the late eighteenth century has shown, it is difficult to establish Adam Smith, let alone Burke, as a 'free marketeer' in anything like the modern sense.

> Cameron (2006) maintains that we could probably become far more healthy by the simple expedient of 'going back in time' in terms of some of our daily activity. We could use a bicycle, walk, or run rather than use a car, bus, or train. Of course, we could all do more domestic tasks by hand rather than using electrically operated gadgets. However, this approach has too many problems to be appealing. After the luxury of labour-saving devices it is just too tedious to go back to the old ways. Also, this is not the most efficient way to build up and maintain a reasonable level of physical fitness. We actually only need to plan three or four exercise sessions a week in order to become fit.

Stalingrad was the greatest single blow of the war. Deep shock, dismay, and depression were recorded everywhere. It was correctly viewed as the low point of wartime morale on the home front.

While agreeing with Jameson's (2003) suggestion that an increase in funding is reuired to maintain the quality of daily television, it is not enough simply to throw money at the problem.

Exercise

Try these exercises: Exercise 1; Exercise 2; Exercise 3

Language

Presenting another point of view

Some people X In a study of Y, X	maintain(s) say(s) argue(s) assert(s) believe(s) claim(s) point(s) out is/are of the opinion seem(s) to believe	that	...
It is the view of X The opinion of X is It can be argued It has been suggested It might be said			
According to X			

Commenting on another point of view

Negatively

They He She X This		is/are may be seem(s) to be would seem to be	somewhat rather -	mistaken. wrong. rigid. inadequate.
X's	approach position methods beliefs			

This These views	is/are	open to doubt. not always the case. not necessarily true. unlikely to be true. highly debatable. incorrect. highly speculative.	
	cannot be upheld.		

Serious	doubts reservations	can may	be raised against this.

I disagree with X when he	writes says	that …

However, Yet,	it is clear that …

One of the main arguments	against	X is that	...

One disadvantage of Another point against A further argument against One other disadvantage of	X	is	...
One objection to this argument			

Plus negative words: wrong, mistaken, false, erroneous, misplaced, inaccurate, incorrect, debateable, untrue, not the case.

By indicating a gap

One way to negatively evaluate an author is by indicating a lack of knowledge in a particular area

However	little	information attention work research data	....
	few	studies investigations researchers attempts	

The research The previous research	has	tended to focus on concentrated on emphasised been devoted to	....,	rather than on as opposed to	....
These studies Most studies	have				

Although	the research considerable research the previous research	has	tended to focus on concentrated on emphasised been devoted to	..., 	rather less attention has been paid to	....
	these studies most studies	have				

Plus negative words: little, few, inadequate, lack, insufficient, hardly.

Positively

I agree with X when he	writes says	that ...

X is certainly correct X may be correct	when he	says	that ...
	in saying		

One advantage of Another point in favour of A further argument supporting One other advantage of One of the main arguments in favour of	X	is	...

Plus positive words: correct, right, accurate.

Support

After you have given your point of view, either negatively or positively, you will need to provide evidence to support it. See: Providing support.

^

Comparison and contrast

Introduction

When you are writing critically, you need to do much more than just give informatrion. You should always be trying to do something with your writing. One common function in academic writing is comparing and contrasting, writing about similarities and differences. You may compare and contrast objects and places, or ideas and opinion obtained form your reading.

There are many ways of expressing comparison and contrast in English.

Examples

Look at the following table and read the text below. Pay attention to the comparisons and contasts.

	Price	Processor Speed	Screen Size	Hard Disk	RAM
Evesham Axis 1.33 SK	£1,174	1.33 GHz	17"	40 GB	256 MB
Armani R850 P4.	£2,467	1.7 GHz	19"	40 GB	256 MB
Mesh Elite 1.7GT Pro	£1,938	1.7 GHz	19"	57 GB	256 MB
Elonex WebRider Pro	£1,174	1.2 GHz	17"	38.1 GB	128 MB

Three personal computers, the Evesham Axis 1.33 SK, the Armani R850 P4 and the Mesh Elite 1.7 GT Pro, were compared with respect to the following factors: price, processor speed and size of hard disk. The Evesham Axis, which costs £1,174, is by far the cheapest of the three, the Armani and the Mesh Elite costing £2,467 and £1,938 respectively. The Evesham Axis has the same hard disk size as the Armani, 40 MB, whereas the Mesh Elite is the largest at 57 GB. Regarding the processor speed, the Armani and the Mesh Elite are similar - the processor speed, at 1.7 GHz, being 0.37 GHz faster than the Evesham Axis.

You may also want to compare events and actions, for example:

Tribes differed in their basic ways of providing for themselves. Indians of the Southwest lived in villages and planted their corn and squash in orderly rows. However, around the Great Lakes forest Indians hunted deer and small

furbearing animals. On the Great Plains braves tracked the buffalo, while in the Pacific Northwest plentiful supplies of salmon and other fish tempted Indians into their canoes and kept hunger away.

Bernard Weisberger, *The impact of our past.* McGraw Hill, 1972.

You may also want to compare opinions and views obtained from your reading. Examples are:

Marx referred throughout his work to other systems than the capitalist system, especially those which he knew from the history of Europe to have preceded capitalism; systems such as feudalism, where the relation of production was characterized by the personal relation of the feudal lord and his serf and a relation of subordination which came from the lord's control of the land. Similarly, Marx was interested in slavery and in the classical Indian and Chinese social systems, or in those systems where the ties of local community are all important.

In the 19th century, two widely differing schools of socialist thought emerged, the Utopian Socialists and the Marxians. The first group believed that public ownership of the means of production was a necessary goal for human happiness. However, they wanted to reach it gradually and peacefully, using democratic methods to make changes through the government. They believed in ballots, rather than bullets. They also felt that owners who had mines, factories or land taken away by the government should be paid for their property. People who have these beliefs today are called Socialists. The second group, led by Marx, also wanted the government to take over all private property used to produce goods. However, their methods were to be very different. They thought that violence or revolution would be necessary because the owners of property would fight to hold on to it. No payment should be made to these owners who lost their property. Today, those who believe in these methods are called Communists.

Edward Kolevzon, *The Afro-Asian world.* Allyn & Bacon, 1971.

Both Bachofen and Morgan believed that, since you belonged to the group by virtue of being your mother's son, women in such a system must have a particularly high status. Engels, however, does not completely follow Bachofen in the belief that at this stage women were actually superior to men.

As a first step in describing this debate, consider the positions taken up by the two leading naturalists at the end of the eighteenth century, the Swede Linnaeus and the Frenchman Buffon. Although both men were forced to modify their opinions later

in life, initially they held the extreme 'nominalist' and 'essentialist' positions. Buffon held that only individuals are real. We group them into species merely as a convenience; if we did not do so, we could not give them names: hence 'nominalism'. For Linnaeus, in contrast, each species had its own essential characteristics - its essence; individual members of a species may differ, but only in non-essential ways.

Belief in the cyclical nature of the universe found its apotheosis in the concept of the Great Year, which the Greeks may have inherited from the Babylonians. The idea had two distinct interpretations. On the one hand, it was simply the period required for the sun, moon, and planets to attain the same positions in relation to each other as they had at a given time. This appears to be the sense in which Plato used the idea in the *Timaeus* . On the other hand, for Heraclitus it signified the period of the world from its formation to its destruction and rebirth.

Locke's distinction between the real and nominal essence of substances is brought out nicely by his analogy of the Strasburg Cathedral clock. Locke's contemporaries marvelled at this human creation just as they marvelled at nature as seen through the microscope. The clock did a lot more besides telling the time of day. For example, it incorporated a globe of the heavens with a revolving sun and moon, an astrolabe showing the positions of the planets, statues which sounded bells, and a mechanical cock. Gassendi spoke of our not knowing the corpuscular nature of things, the 'inner shrines' of nature, but only their appearances; similarly, the 'gazing countryman', as Locke calls him, would know only the clock's outer show, and not its internal mechanism. The 'nominal essence' of the clock is the idea we have of it and, as with gold, this will vary from person to person. One observer may have been particularly impressed by the figure of Death sounding the hours on a bell, and his idea will include that. Another, who did not pass by on the hour, might think, not of Death, but of the astrolabe showing the positions of the planets.
Though different in detail, these ideas are similar, in that they both derive from the clock's observable characteristics and behaviour. For Conrad Dasypodius, however, the mathematician at Strasburg Academy who designed and planned the clock, the nominal essence would be radically different. He would understand in detail the working of the mechanism of the clock, which enables it to function as it does. His general idea, his 'nominal essence' of the clock would be an idea of what is, in effect, its 'real essence'.This work of art provided an analogy for works of nature such as gold. They both have observable features and properties. The clock has moving hands and figures; gold is yellow, malleable, soluble in some acids, and not in others. Then, just as the clock, and clocks like it, have a certain inner mechanical constitution from which these features arise, so has gold in the view of those who adopted the corpuscular hypothesis. The different performances of other clocks correspond to different mechanisms; the differences in quality of

different substances, the yellowness of gold, or the silvery colour of lead, similarly correspond to differences in the shape, size, arrangement, and state of motion of their corpuscles.

But there is an important difference between the clock, which is what Locke calls an 'artificial substance', and naturally occurring substances such as gold. The clock's designer would know the details of its real essence whereas, says Locke, none of us know the real essence of gold. Our sensory capacities are too limited.

Exercise

Try these exercises:

Exercise 1: Computers

Exercise 2: PDAs

Exercise 3 Printers

Exercise 4 Digital Voice Recorders

Language

Comparison

The Evesham Axis is like the Elonex WebRider The Evesham Axis and the Elonex WebRider are similar The Evesham Axis is similar to the Elonex WebRider The Evesham Axis is the same as the Elonex WebRider The Evesham Axis resembles the Elonex WebRider	with respect to price. as regards price. as far as price is concerned. regarding price. in that the price is the same. in terms of price. in price.

Both the Evesham Axis and the Elonex WebRider cost £1,174. The Evesham Axis is as expensive as the Elonex WebRider. The Evesham Axis costs the same as the Elonex WebRider. The Evesham Axis is the same price as the Elonex WebRider.

The Mesh Elite has a large screen.	Similarly, it has a high capacity hard disk. Likewise, it has a high capacity hard disk. Furthermore, it has a high cap[acity hard disk.

	Moreover, it has a high cap[acity hard disk. Correspondingly, it has a high capacity hard disk. It has a high capacity hard disk, too. It also has a high capacity hard disk.

Contrast

The Evesham Axis differs from the Armani The Evesham Axis is unlike the Armani The Evesham Axis and the Armani differ The Evesham Axis is different from the Armani The Evesham Axis contrasts with the Armani	with respect to price. as regards price. as far as price concerned. regarding price. in terms of price. in price.

The Evesham Axis costs £1,174, whereas the Armani costs £2,467. The Evesham Axis costs £1,174, while the Armani costs £2,467. The Evesham Axis costs £1,174, but the Armani costs £2,467. The Evesham Axis costs £1,174, in contrast to the Armani, which costs £2,467. The Armani is more expensive than the Evesham Axis. The Evesham Axis is not as expensive as the Armani. The Armani costs more than the Evesham Axis.

The Armani is expensive to buy.	On the other hand, it is very fast and has a large screen. In contrast, it is very fast and has a large screen. Conversely, it is very fast and has a large screen. However, it is very fast and has a large screen. But, it is very fast and has a large screen.

Although the Armani is expensive to buy, Despite the high price of the Armani,	it is very fast and has a large screen.

^

Generalising

Introduction

One important aspect of critical writing is making general claims from specific examples. This is something that you learn in higher education.

These general claims need to be supported with evidence. A common organisational principle in academic writing is the **general-specific** pattern. This patterns involves a general statement supported by specific examples or details.

Example

Look at the following examples involving generalisations. In some cases the generalisations are supported by details or examples.:

> It believed that the USA wanted a round-the-world air route with access to all countries including the Soviet Union, China, the Middle East, and Africa, as well as the British Commonwealth and Empire.

> Marx and Engels followed their contemporaries in believing that the history of mankind usually went through the same sequence of technological improvement. The sequence, by and large, went like this: first gathering of plants and small animals, second fishing, third hunting, fourth pottery, fifth pastoralism, sixth agriculture, seventh metalworking.

> Throughout most of known human existence the processes, materials and tools of production were available to individuals involved in both utilitarian and expressive work. Since the Renaissance, however, the exponential growth and sophistication of technology has made it impossible for the majority of artists to gain access to many potential tools for expression.

> Covert operations are different from espionage in that their main purpose is to influence a foreign situation without the source of the influence becoming known. Such operations may take the form of secretly financing, advising, or otherwise helping a group which is trying to overthrow an unfriendly foreign government. They may take the form of secret money subsidies or other assistance to a foreign political party or to a particular faction of a foreign labour movement, or student organization, or similar groups. They may take the form of psychological warfare - for example, the publication of an underground newspaper or the operation of a clandestine radio station which, according to the circumstances, may report the truth or spread unfounded rumours calculated to destroy morale or to mislead. They may take the form of an outright bribe of a foreign official to make a certain decision. They may take the form of infiltrating one or more secret agents into positions of

power in a foreign government or any important foreign political, economic, or social group.

Pat Holt, *United States policy and foreign affairs.* Allyn & Bacon, 1972.

Language

Plural nouns are often used for broad generalisions ("Covert operations are"). It is often possible to be more specific about the generalisation that is being made by the use of:

Percentage	Quantity	Frequency	Certainty	Verbs
100%	all/every/each most a majority (of) many/much some a number (of) several a minority (of) a few/a little	always usual(ly) normal(ly) general(ly) as a rule on the whole often frequent(ly) sometimes occasional(ly)	certain(ly) definite(ly) undoubtedly clearly presumably probably/probable likely conceivably possibly/possible perhaps maybe	will is/are must have to should ought to can could may might
0%	few/little no/none/not any	rare(ly) seldom hardly ever scarcely ever never	uncertain unlikely	 could not will not cannot is/are not

Some of the probability qualifications can he further qualified, e.g.

It	is	fairly very quite rather almost quite	certain likely probable possible	that ....

	seems appears	likely unlikely unlikely certain	

Sometimes generalisations may be introduced or qualified in the following way:

In	the (vast) majority a large number	of	cases, ...
	most some a few (+ other "quantity" words)		

Supporting generalisations

These general claims need to be supported with evidence.

More information:

- *Providing support*

You need to provide evidence to support your points of view and conclusions.

See: Providing support

- *Supporting an argument: Illustrating and exemplifying ideas*

You can use examples to support your conclusions.

See: Giving examples

^

Expressing degrees of certainty

Introduction

It is important when you are writing critically to show how sure you are about something. In other words, you need to show the degree of certainty. Bear in mind, though, that academic writing is usually cautious, to some extent.

Examples

Look at the following examples:

> It is not known, and will probably never be known, when he began writing poetry. The answer almost certainly lay in the sack of papers that Susan Owen, on her son's strict instructions, burnt at his death.

> Less finished, but more intimate, is a passage from a fragmentary "Ballad of a Morose Afternoon", written most probably some time after he had left Dunsden.

> The other way in which the economic aspects of military expenditure were presented was in the form of the public expenditure costs. However, this
> was definitely secondary to the manpower approach.

> Water color was, possibly because of the time it took, less popular than tempera.

> Her success undoubtedly inspired younger women, and she openly encouraged those in her office.

> There were, broadly, two interrelated reasons for this, the first relating to Britain's economic and Imperial difficulties, the second to the internal dissension in all three parties, a symptom perhaps of the need for a realignment of political parties.

Some of the claims are very strong:

It is not known ...

this was definitely secondary ...

Her success undoubtedly inspired younger women ...

Some are much more cautious:

It will probably never be known.

... possibly because of the time it took

... a symptom perhaps of the need for a realignment

Language

	Verbs	Degree of certainty
complete	is (not) will (not) must (not)	certain(ly) definite(ly) clear(ly) undoubtedly
strong	can/cannot should (not)	probably (not) presumably (not)
partial	could (not)	likely/unlikely
less strong	may (not) might (not)	possibly (not) perhaps (not)
impersonal (i.e. no commitment)	It	is said that ... appears that ... seems that ...
	X reports that ... There is evidence to suggest that ...	

^

Reasons and explanations

Introduction

When you are writing critically, it is important to explain why something is the case. You need to give reasons and explanations for any claims you make.

Take the following sentence:

The death rate from cancer is increasing.

We might want to ask why this is happening. We want the cause of this. The reason, or the cause, is that:

People are smoking more.

The death rate from cancer is increasing is the effect.

People are smoking more is the cause.

Example

Read the following text and observe the cause and effect relationships.

There are several factors to be taken into account when studying why some plants become weak or die. One reason is lack of water. Dryness in the soil causes the leaves to wilt, and may give rise to the death of the plant. On the other hand, too much water may result in the leaves drooping, or becoming yellow. While sunshine is necessary for plants, if it is too strong, the soil may be baked and the roots killed. However, if there is no light, the leaves will become pale and the stems thin. Consequently the plant may die.

- Lack of water → dryness in the soil → leaves wilt → death of plant.
- Too much water → leaves droop or become yellow → death of plant.
- Too strong sun → baked soil → roots killed → death of plant.
- Lack of light → pale leaves & thin stems → death of plant.

More examples:

War, meantime, had broken out between the United States and Mexico. The main cause was a long standing dispute over where the southern boundary of Texas belonged. Americans were saying it lay along the Rio Grande, and the Mexicans were insisting that it belonged along the Nueces River.

Henry Graff, *The free and the brave.* Rand McNally, 1968.

While this is not the place to discuss the pros and cons of American policy in Southeast Asia, Americans should not have been surprised by Martin Luther King's stand. In opposing what he considered to be an imperialistic adventure and a war of colonial oppression, King was acting in the great tradition of Negro leaders throughout American history. Frederick Douglass, it will be recalled, had denounced the American war against Mexico; his son had ridiculed and protested the American war against Spain. And to a man of Dr. King's historical scholarship, the dangers to the struggle for Negro rights of continued American participation in the Vietnam conflict seemed clear.

First of all, no matter what the proclaimed intentions of the American government might be, American soldiers were fighting against a colored people as they had in the Philippines from 1898 to 1901; and that could only aggravate anti-Negro feeling domestically. Secondly, Negro troops who provided more than eleven percent of the American combat forces in Vietnam and suffered eighteen percent

of the casualties might well ask themselves the same question that Private William Simms found unanswerable during the Philippine campaign. In the third place, militarism had always been the arch-enemy of tolerance and progress. After each of America's wars, there had been a reaction of more or less severe hysteria against all progressive movements, including the struggle for Negro equality. And finally (as Dr. King reminded his critics), he had received a Nobel Prize for peace, he was a citizen of the world as well as an American Negro, and he felt himself responsible to work for peace everywhere. From the viewpoint of history, it would seem that Dr. King had no need to apologize at all for his new position.

Robert Goldson, *The negro revolution*, Macmillan, 1968.

The following text gives three reasons why DNA is unique:

DNA is unique in three respects. First, it is a very large molecule, having a certain outward uniformity of size, rigidity and shape. Despite this uniformity, however, it has infinite internal variety. Its varied nature gives it the complexity required for information-carrying purposes. One can, indeed, think of the molecule as if it had a chemical alphabet somehow grouped into words which the cell can understand and to which it can respond.

The second characteristic of DNA is its capacity to make copies of itself almost endlessly, and with remarkable exactness. The biologist or chemist would say that such a molecule can replicate, or make a carbon copy of itself, time and again with a very small margin of error.

The third characteristic is its ability to transmit information to other parts of the cell. Depending upon the information transmitted, the behavior of the cell reflects this direction. As we shall see, other molecules play the role of messenger, so that DNA exercises its control of the cell in an indirect manner.

William McElroy & Carl Swanson (Eds.), *Foundations of biology.* Prentice-Hall, 1968.

Exercise

Try this exercise: Exercise 1

Language

This relationship can be expressed in many ways:

1. Simply

Emphasising cause.

The death rate from cancer is increasing	because owing to the fact that	people are smoking more.

Emphasising effect.

As Because Since	people are smoking more,	the death rate from cancer is increasing.

People are smoking more.	Therefore, So, Thus, Hence, Consequently, Because of this, For this reason, As a consequence, As a result,	the death rate from cancer is increasing.
People are smoking more,	as a result of which as a consequence of which with the result that	

2. With some grammatical changes.

Emphasising cause.

The fact that	the death rate from cancer is increasing	is due to may be due to	people smoking more.

The One	reason for cause of	the death rate from cancer increasing	is that could be that	people are smoking more.

An increase in the death rate from cancer	is may be	one effect of one result of one consequence of caused by due to because of	people smoking more.
		results from arises from	

Emphasising effect.

Owing to	people smoking more,	the death rate from cancer is increasing.

One The	effect of result of consequence of	people smoking more	is that	the death rate from cancer is increasing.
			is to	increase the death rate from cancer.

People smoking more	results in leads to produces causes is the cause of gives rise to brings about	an increase in the death rate from cancer.

People smoke more,	(so) (thus) (thereby)	resulting in leading to producing causing giving rise to bringing about	an increase in the death rate from cancer.

If	people smoke more	the death rate from cancer will increase.

Exercise

Try this exercise: Exercise 2

^

Describing feelings

Introduction

Often, for example in relective writing, it is necessary to describe your feelings about something.

Based on Kolb's work on refelcetion, Gibbs (1988, p. 47) suggests the following stages to encourage deeper reflection:

Description:	What happened? What are you going to reflect on? Don't make judgements yet or try to draw conclusions.
Feelings:	What were your reactions and feelings?
Evaluation:	What was good or bad about the experience? Make value judgements.
Analysis:	What sense can you make of the situation? Bring in ideas from outside the experience to help you. What was really going on?

Conclusions(general):	What can be concluded, in a general sense, from these experiences and the analyses you have undertaken?
Conclusions(specific):	What can be concluded about your own specific, unique, personal situation or ways of working?
Personal action plans:	What are you going to do differently in this type of situation next time? What steps are you going to take on the basis of what you have learnt?

See: Writing Functions 40: Reflecting

Language

Reflective writing should include both descriptions, feelings, analysis and thoughts about what you have experienced.

Unlike other academic writing, reflective writing is usually written in the first person and should definitely include your thoughts, feelings and opinions e.g. *"I read the handout before the lecture. This is often recommended. I was therefore well-prepared for the lecture and understood it well. I was happy with that. I will continue to read the handouts before the lecture"*.

Some useful language is:

Feelings

Describe how you felt.

I felt (very) pleased with ...
I was (really) delighted ...
I was quite satisfied.

It wasn't very nice.
I didn't (really) like ...
I wasn't (very) happy with ...

I didn't like ...

I (really) hated ...
I was (very) annoyed ...
I was (really) angry ...
I was (extremely) irritated/exasperated/displeased/unhappy/angry.

+ ▲ - ▼

On the one hand, ...
On the other hand, ...

Example

Read this example. Can you recognise the sections and language identified above.

Feelings

I was very worried before the presentation. I was afraid that I would not be able to say the right things and that I would not be able to represent our progress adequately. I had done one or two oral presentations before but had never been very satisfied with them.
I decided to use Power Point. I was not very secure about its use, though, because I have seen it go wrong so many times. I thought it would be a good idea to practise in advance but I couldn't get access to the room with the projector in so I wasn't able to. I was quite annoyed about that.
When it came to giving the presentation, I really wanted to do it well. But, as it turned out, the presentation was terrible. It just didn't go smoothly at all. It has left me feeling very unconfident in my ability. I even worry about it at home and it's affecting my other courses. The timing was terrible and everyone seemed bored. No one asked me any sensible questions, either. The PowerPoint presentation itself went wrong. I think I clicked on the wrong button. I was very nervous and my voice was very unsteady. Well, that was how I felt, anyway.

Key:

Feelings

^

Analysing

Introduction

One thing that you learn in higher education is how to analyse. It is an essential part of writing critically as defined by Bloom.

Analysis:

- Identifies causes and effects.
- Provides reasons.
- Finds evidence and examples to support generalisations.
- makes connections: comparisons and contrasts.
- Distinguishes between facts and opinions.
- Draws conclusions.

Typical verbs associated with analysis include: analyses, breaks down, compares, contrasts, deconstructs, differentiates, discriminates, distinguishes, identifies, illustrates, infers, outlines, relates, selects, separates.

Typical assignment questions/briefs associated with analysis are:

- What are the parts or features of ...?
- How is _____ related to ...?
- Can you show connection between ...?
- How would you compare/contrast ...?
- Why ...?

For example:

ROCKS

Scientists group rocks into three main types: igneous, sedimentary and metamorphic.

IGNEOUS rocks are produced by white-hot material deep inside the earth which rises towards the surface as a molten mass called magma. If the magma stops before on it reaches the surface, it cools and forms rocks such as granite. If the magma erupts, it forms a red-hot stream called lava. When the lava cools it becomes rock. One of the most common lava rocks is called basalt. Igneous rock is

used in the formation of the other two main types of rocks - sedimentary and metamorphic.

SEDIMENTARY rock is formed by small particles or sediments such as sand, mud, dead sea animals and weathered rock. These are deposited in layers and become solid rock over millions of years as they are squeezed by the weight of other deposits above them.

The word metamorphosis means 'change'. Rocks which have been changed by heat and pressure are called METAMORPHIC rocks. They are formed deep inside the earth. Slate for example is formed from compressed mud or clay. Marble is another type of metamorphic rock. It is produced from limestone which has undergone change through heat and pressure,

Analysis includes:

Writing about pupose/function

Comparing and contrasting

Expressing reasons and explanations

Giving examples

Classifying/categorising

Providing support

Expressing degrees of certainty.

Writing generalisations

Arguing and discussing.

Drawing conclusions

Action plans

Introduction

Often, for example in relective writing, it is necessary to describe your plans for action.

Based on Kolb's work on refelcetion, Gibbs (1988, p. 47) suggests the following stages to encourage deeper reflection:

Description:	What happened? What are you going to reflect on? Don't make judgements yet or try to draw conclusions.
Feelings:	What were your reactions and feelings?
Evaluation:	What was good or bad about the experience? Make value judgements.
Analysis:	What sense can you make of the situation? Bring in ideas from outside the experience to help you. What was really going on?
Conclusions(general):	What can be concluded, in a general sense, from these experiences and the analyses you have undertaken?
Conclusions(specific):	What can be concluded about your own specific, unique, personal situation or ways of working?
Personal action plans:	What are you going to do differently in this type of situation next time? What steps are you going to take on the basis of what you have learnt?

See: Writing Functions 40: Reflecting

Action planning, therefore, needs to include:

- What are you going to do differently in this type of situation next time?
- What steps are you going to take on the basis of what you have learnt?

In more detail, it can involve:

- identifying and setting your objectives
- identifying what actions you commit to taking
- identifying what will indicate that the objectives have been achieved
- prioritising your tasks
- identifying the stages needed to achieve your goals
- identifying a timescale
- working to a deadline

Language

Some useful language is:

Action Plans

Explain what you are going to do next and justify it.

I'm going to ...
I feel it is necessary for me to ...
I've decided to ...
I now intend to ...
It's my intention to ...
I fully intend to ...
I'm going to make sure I ...
I plan to ...

I should now ...
I ought to ...

I'm planning to ...
I'll make the effort to ...
I'll see if I can ...
I'll do what I can to ...
I'm thinking of ...
I might ...

I'd prefer ...
I'd rather ...
It would be better to ...

I'll probably won't ...

I'm not keen on ...
I'd rather not ...

I'm not gouing to ...

The main reason is that ...
This is because of ...

Because of that, ...
For that reason, ...
As a consequence, ...
As a result, ...

One effect of this will be ...
One result of this might be...

Example

Read this example. Can you recognise the sections and language identified above.

Action plan

I'll probably always be a little nervous in such a situation, but next time, I will make sure that I know the subject matter well, and that I know how the computer works, before I start. That means I need to study the PowerPoint manual more. I also need to make sure I am organised enough to have a practice session with the rest of the group.

Key:

Feelings;

^

Providing support

Introduction

One thing that you learn in higher education is how to make general claims from specific examples.

Your claims, though, need to be supported. This is an important aspect of critical writing.

Supporting generalisations

There are three main ways in which you can support your generalisations. You can support your claims with examples, with details or with evidence.

Look at these extracts all related to the use of fire in agriculture. In extract 1, the claim is supported by a diagram (figure 8.1)

Extract 1

Land which was burned too frequently became overgrown with perennial grasses, which tended to make it difficult to farm with primitive tools. Land cultivated for too long rapidly suffered a deterioration in fertility, while land recently burned was temporarily rich in nutrients (see figure 8.1).

(Andrew Goude, *The human impact on the natural environment.* Basil Blackwell, 1981)

In extract 2, the claim that the use of fire has not been restricted to primitive people in the tropics is supported by examples of practice in highland Britain, and parts of north and south Amertica as well as evidence from Sternberg.

Extract 2

The use of fire, however, has not been restricted to primitive peoples in the tropics. Remains of charcoal are found in Neolithic soil profiles in highland Britain; large parts of North America appear to have suffered fires at regular intervals prior to European settlement; and in the case of South America the 'great number of fires' observed by Magellan during the historical passage of the Strait that bears his name resulted in the toponym, 'Tierra del Fuego'. Indeed, says Sternberg (1968: 718): 'for thousands of years, man has been putting the New World to the torch, and making it a "land of fire".'

(Andrew Goude, *The human impact on the natural environment.* Basil Blackwell, 1981)

In extract 3, the claim that fire is still used is supported by evidence from Lemon, a diagram (plate 2) and examples from Malysia, Indonesia and Latin America.

Extract 3

Given this remarkable utility [fire] it would be surprising if it had not been turned to account. Indeed it is still much used, especially by pastoralists such as the cattle-keepers of Africa (Lemon, 1968), and by the practitioners of shifting agriculture (plate 2.2). For example, the Malaysian and Indonesian *ladang* and the *milpa* system of the Maya in Latin America involved the preparation of land for planting by felling or deadening forest, letting the debris dry in the hot season, and burning it before the commencement of the rainy season.

(Andrew Goude, *The human impact on the natural environment.* Basil Blackwell, 1981)

And in extract 4, the claim that fired can assist in seed germination is supported by examples.

Extract 4

Fire may assist in seed germination. For example, the abundant germination of dormant seeds on recently burned chaparral sites has been reported by many investigators, and it seems that some seeds of chaparral species require scarification by fire.

(Andrew Goude, *The human impact on the natural environment.* Basil Blackwell, 1981)

Supporting with examples

You can provide support for your claims by using examples.

The reduction in numbers was still startlingly small. For example, even after the convertibility crisis of 1947 had led to a further downward revision of the targets for 31 March 1948, there were still 937,000 men in uniform, supported by 350,000 in supplying industries.

The nature of contemporary class structures and the facts of exploitation are the object of elaborate ideological manipulation by the ruling classes of all modern industrial states. Both the United States and the Soviet Union, for example, have ruling classes that foster the illusion that they do not exist. The governing elites of both countries claim that the people are the source of all power. Both ruling classes

claim to be democratic, and, to a considerable extent, the mass of Soviet and U.S. citizens appear to accept these illusions as accurate accounts of actual conditions in their own but not the other country.

(Marvin Harris, *Culture, people, nature: An introduction to general anthropology,* Harper & Row, 1975)

For more practice, see: Giving examples

Supporting by giving details.

You can provide support for your claims by providing details.

Many international students studying at British institutions of further or higher education experience problems. Some of these problems will be general to all students, but many will be particular to those students who are non-native speakers of English.

One interesting mechanism for getting around this problem is known as silent trade. The objects to be exchanged are set out in a clearing, and the traders retreat out of sight. The other group inspects the wares and lays down what it regards as a fair exchange of its own products. The first group returns and, if satisfied, removes the traded objects. If not, it leaves the wares untouched as a signal that the balance is not yet even.

(Marvin Harris, *Culture, people, nature: An introduction to general anthropology,* Harper & Row, 1975)

Several languages have however been quite remarkable in terms of their significance and use over time. Greek had a key role in parts of Eurasia and North Africa from the death of Alexander the Great (323 BC) to the fall of Constantinople (1453): almost 1,800 years (and it continues as a primary language of the European Union). Latin was a key language of government, religion, and scholarship from the defeat of Carthage (202 BC) to 1687, when Newton published his first major work, the *Principia*, in Latin, and 1704, when he published his second major work, *Opticks*, in English: almost 2,000 years.

(Tom McArthur, *The Oxford guide to world English*. Oxford University Press, 2002)

Supporting by providing evidence

You can provide evidence to support your claims.

Evidence from your knowledge

> The English language ceased to be the sole possession of the English some time ago. Indeed, when even the largest English-speaking country, the USA, turns out to have only 20 per cent of the world's English speakers, it is clear that no one can now claim sole ownership.

> Even so, however, we cannot simply single English out for special attention, and this for four reasons. First, the fundamental issue raised by Crystal is evolution, in which the time scale is immense. Secondly, English did not leap out of nowhere: it is an inheritor and is in a serious sense simply part of an already copious flow. Languages such as Latin, Greek, Sanskrit, Classical Arabic, Classical Chinese, and French have all been part that flow, English taking up where others have left off or may now be leaving off - or, indeed, may not at all be leaving off. Thirdly, although it is the pre-eminent world language of our time, English is far from being the only world language. Fourthly, English evolves, and the present-day language in all its varieties is vastly different from past Englishes, while its broad international standard is often very different from many of its varieties.
>
> (Tom McArthur, *The Oxford guide to world English*. Oxford University Press, 2002)

For more practice, see: Reasons & explanations: Cause & effect

Evidence from research

You can cite evidence:

> The intensity of physiotherapy provision may affect some patient outcomes including reduced mortality following a stroke (Jones, 1997; Smith, 2006) .

Or you can use another person's words:

> The issue of language has been hugely important in thinking about ways to address the discrimination and oppression of disabled people. Neil Thompson, a social work academic, writer and former practitioner states, “The language we use either reinforces discrimination through constructing it as normal or contributes in some small way at least to undermining the continuance of a discriminatory discourse” (2007: 39).

Evidence from graphs and figures

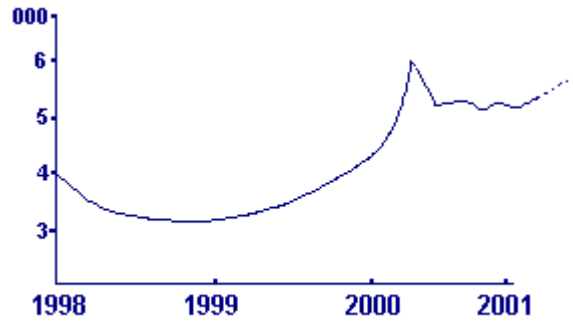


Figure 1. Sales of mobile phones per month

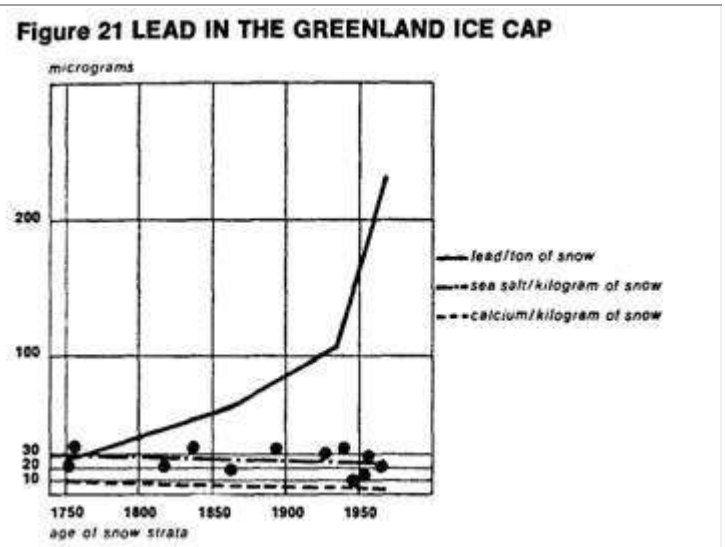
Figure 1 shows sales of mobile phones per month. As can be seen, sales of mobile phones increased steadily from 1998 to 2001.

td>

	Married Men	Married Women
Food production Food preparation Manufacture Child care Hygiene Visiting Idle	4.4 hours 0.2 hours 1.4 hours 0 0.3 hours 1.0 hours 2.3 hours	1.8 hours 2.4 hours 2.1 hours 1.1 hours 0.6 hours 0.8 hours 2.5 hours
TOTAL	9.6 hours	11.3 hours

Table 4: Time devoted to various activities by married men and women.

Table 4 shows that food production plus food preparation plus the manufacture of essential items such as clothing, tools and shelter consume on 6 hours per day for married adult males and 6.3 hours per day for married adult females.

	An exponential increase in deposits of airborne lead has been detected by extraction of successively deeper samples from the Greenland ice cap, as shown in figure 21.

See also:

Providing support with statistical evidence:

Providing support with evidence from interview data

Providing support with theory

Proving support with evidence from previous research.

Including charts and diagrams

Exercise

Try this exercise:

Exercise 1

^

Application

Introduction

One thing that you learn in higher education is how to apply what you are learning to the real world. It is an essential part of writing critically as defined by Bloom.

Make sure you distinguish between describing something you have learned, for example a theory, and applying it - that is, explaining how it has been used. See: Describing objects; Describing function; Describing processes; Supporting.

Application:

- Uses a concept in a new situation.
- Applies what was learned in the classroom into novel situations.
- Applies general ideas to concrete situations.
- Applies what is discussed in one paper to another paper.
- Predicts probable effects.
- Solves problems by applying acquired knowledge, facts, techniques and rules in a different way.

Typical verbs associated with application include: apply, construct, demonstrate, derive, find, forecast, highlight, illustrate, implement, modify, plan, produce, reconcile, relate, schedule, show, solve, tabulate, use, validate, verify.

Typical assignment questions/briefs associated with application are:

- How would you use ...?
- What examples can you find to ...?
- Can you relate this information to the present situation?
- How would you organize _____ to show ...?
- What approach would you use to ...?
- How would you apply what you learned to develop ...?

Example

> The law of supply states that an increase in quantity demanded would increase the price of the product and therefore less will be demanded at the new process. Therefore in analysing the market for electricity, the supply curve would be affected because there would be an increase in supply as there is a new product on the market and everybody would want it.

Notice how we have included a statement of the economic principle, and an application of the economic principle:

> The law of supply states that an increase in quantity demanded would increase the price of the product and therefore less will be demanded at the new price. Therefore in analysing the market for electricity, the supply curve would be

affected because there would be an increase in supply as there is a new product on the market and everybody would want it.

Examples

1. The Theorem of Pythagoras states that the square of the length of the hypotenuse of a right triangle is equal to the sum of the squares of the lengths of the two remaining sides of the triangle - $a^2+b^2=c^2$. In the case of purchasing a new television set to fit in a particular space, we know that televisions are generally measured diagonally, from corner to corner. So, a 35-inch television is 35 inches from one corner to the corner diagonal opposite it. The space available for the television is 30 inches long and 17 inches tall. Using the Pythagorean Theorem, we can calculate that the space will hold a television with a diagonal of the square root of $30^2 + 17^2$, which is 34.5 inches. From this, we know that we may want to purchase a slightly smaller television to fit the space.

2. Following Belbin's (1993) model of team roles at work, people in teams tend to assume different team roles. He suggests that understanding the different roles within a particular team can contribute to the success of the team. Teams can become unbalanced if all team members have similar styles of behaviour or team roles. In our groups, we found that after analysing the team several of the team members could be classified as shapers. Shapers are people who challenge the team to improve. According to Belbin, our team would be more successful if we had a more balanced team and this would include fewer shapers.

3. Porter's (1980) Five Forces model refers to "substitute products" as those products that are available in other industries that meet an identical or similar need for the user. As more substitutes become available and affordable, the demand becomes more elastic since customers have more alternatives. Substitute products may therefore limit the ability of firms within an industry to raise prices and improve margins. In our study, the price of aluminium cans is constrained by the price of glass bottles, steel cans, and plastic containers. These containers are substitutes; so constrain the demand for our aluminium cans.

4. According to Darwin's (1859) evolutionary theory, natural selection is a matter of reproductive success. This means that the fittest individuals are the ones who have the combination of traits that allow them to survive longer and produce more offspring. Those beneficial traits will be inherited by next generations.

5. House (1996) argues that effective leaders are those who clarify their subordinates' path to the rewards available, and ensure that rewards the subordinates value are available. Foe example, if a subordinate has little confidence or skill then the leader needs to provide coaching and other support. If the subordinate likes clear direction they will respond best to a leader who gives it.

6. In addition to the direct effects discussed above, we also examined the indirect effects of positive and negative feedback on job satisfaction. We used the competing models analysis suggested by Singh et al. (1994) to study this effect.

7. Brown's (2012) theory of employee motivation provides a useful analytical framework of factors which might impact on workplace motivation in general. However, it may be that the criteria he uses are too limited in scope. For example, the theory does not include any affective criteria. The present study investigated the extent to which the quality of the social experience associated with the workplace is also going to be an important motivational factor for employees.

8. The task performance of six teams of four individuals identified as shapers by the Team-Role Self-Perception Inventory (Belbin, 1981), was compared with that of six mixed teams of four individuals; one coordinator, one plant, one completer finisher, and one team worker. It was found that consistent with Belbin's proposal the "mixed" teams performed better than teams consisting of shapers alone.

Application can involve, description, evaluation and modification.

Tuckman and Jensen (1977) developed a theory that groups can potentially pass through and adjourning. However, a team that survives will go through these stages many times. arise that take the group back to an earlier stage. A new member implies that the team r member is brought psychologically into the team and understands how they are expecte storming stage, from which it needs to work forward again. The process will be more like

(Boddy's (2008, p. 571) evaluation and modification of Tuckman and Jensen's theory of

Language

Statement of Principle

Before you can apply a principle/model/theory, you need to present it and explain it, at the same time making it clear from whom and where you have obtained the ideas you are discussing . For example

According to Darwin's (1859) ...

Porter's (1980) Five Forces model refers to ...

The Theorem of Pythagoras states that ...

Brown (1983, p. 231) states that ...

Here are some more expressions you can use to introduce and explain a theory or principle.

The work of X indicates that ...

The work of X reveals that ...

The work of X shows that ...

Turning to X, one finds that ...

Reference to X reveals that ...

In a study of Y, X found that ...

As X points out, ...

As X states, ...

As X has indicated, ...

A study by X shows that ...

X has drawn attention to the fact that ...

X correctly argues that ...

X rightly points out that ...

X makes clear that ...

According to X...

It is the view of X that ...

The opinion of X is that ...

In an article by X, ...

Research by X suggests that ...

X has expressed a similar view.

X reports that ...

X notes that ...

X states that ...

X observes that ...

X concludes that ...

X argues that ...

X found that ...

X discovered that ...

Application

You can then apply it to your own context.

This seems to indicate that...

This means that ...

Therefore ...

According to this theory ...

Here we see ...

From this, we can understand ...

In other words ...

It follows that ...

The implications are therefore that ...

It must therefore be the case that...

The indications are therefore that...

It is clear therefore that ...

On this basis it may be inferred that...

Given this ..., it can be seen that...

As a result ...

As a consequence ...

This leads to ...

Concluding

In short, In a word,	....

In brief, To sum up, To conclude, To summarise In conclusion, On the whole, Altogether, In all,	

It is	generally widely	accepted argued held believed	that ....

Therefore, Thus, On this basis, Given this,	it	can may	be	concluded deduced inferred	that... .

From	Table 1		it	can may	be	seen concluded shown estimated calculated inferred	that ....
	the	table figures data results information					

In conclusion, Finally	we/may say it can/may be said	that ....

Working with different voices

Introduction

In academic writing, it is often necessary to make it clear to your reader what opinion you hold or what your position is with regard to a certain issue. This is often called your "voice" or your "position" or your "claim". Your position may be based on other people's research (eg, Smith & Jones), but the conclusion you have come to is your own.

As a student, it is not enough to simply describe a situation or recall the facts, you need to take a stance or position yourself in relation to the situation or the facts. This is particularly important in assessment when you have to answer a question. Of course, you need to know and reproduce the information, but you also need to use the information to give an answer to the question, to give YOUR answer to the question.

It is therefore useful to be able to recognise the different voices in a text and learn how to make yours clear.

Recognising different voices

Read extract 1 and try to identify the different points of view contained in it.

Extract 1

It is important not to assume that merely because a practice is associated with low-income levels that it is necessarily inferior. Helen Icken Safa (1967) has shown, for example, that high-rise public housing destroys the sense of community and patterns of neighborly cooperation that frequently exist in established slums and shantytowns. Betty and Charles Valentine (1970) stress the resourcefulness, sense of humor, and informality of black ghetto culture. Oscar Lewis's (1961, 1966) remarkable documentaries of ghetto life, as told in the tape-recorded words of the people themselves, show that many individuals who are trapped in poverty nonetheless achieve a great nobility of spirit.

(Marvin Harris, *Culture, people, nature: An introduction to general anthropology,* Harper & Row, 1975)

I think you will find the following:

- a cultural practice that is associated with low-income levels is not necessarily inferior
- high-rise public housing destroys the sense of community
- cooperation among neighbours often exists in slums and shantytowns

- black ghetto culture is resourceful, informal and has a sense of humour
- many individuals trapped in poverty achieve a great nobility of spirit

Try now to see where these points of view have come from.

I think you will find the following:

- a cultural practice that is associated with low-income levels is not necessarily inferior - comes from Marvin Harris, the author of the book
- high-rise public housing destroys the sense of community - comes from the writing of Helen Icken Safa
- cooperation among neighbours often exists in slums and shantytowns - comes from the writing of Helen Icken Safa
- black ghetto culture is resourceful, informal and has a sense of humour - comes from the research of Betty & Charles Valentine
- many individuals trapped in poverty achieve a great nobility of spirit - comes from the work of Oscar Lewis

So we can clearly associate the ideas with the different voices of the people we have identified.

Point of view	Voice of
a cultural practice that is associated with low-income levels is not necessarily inferior	Marvin Harris, the author of the book
high-rise public housing destroys the sense of community	Helen Icken Safa
cooperation among neighbours often exists in slums and shantytowns	Helen Icken Safa
black ghetto culture is resourceful, informal and has a sense of humour	Betty & Charles Valentine
many individuals trapped in poverty achieve a great nobility of spirit	Oscar Lewis

So the writer of the paragraph - Marvin Harris - is supporting his claim that cultural practices associated with low-income levels are not necessarily inferior by drawing on the work of others. These others are Helen Icken Safa, Betty & Charles Valentine and Oscar Lewis.

In extract 2, the author's claim that the human impact on the environment has been central to some Western historical geographers' studies is supported by the voices of 4 other researchers: Darby, Sauer, Williams and McKnight.

Extract 2

The theme of the human impact on the environment has, however, been central to some Western historical geographers studying the evolution of the cultural landscape. The clearing of woodland (Darby, 1956), the domestication process (Sauer, 1952), the draining of marshlands (Williams, 1970), the introduction of alien plants and animals (McKnight, 1959), and the reclamation of heathland are among some of the recurrent themes of a fine tradition of historical geography.

(Andrew Goude, *The human impact on the natural environment.* Basil Blackwell, 1981)

These examples contrast with the single voice of the author in extract 3. As we not provided with any other evidence, we conclude that it is Goude's opinion that three basic questions have been asked::

Extract 3

In the history of Western thought three basic questions have been posed concerning the relationship of people to the habitable earth. The first of these is whether the earth, which is plainly a fit environment for humans and other organic life, is a purposefully made creation, made perhaps by God for humankind. The second is whether the climates, relief and configuration of the continents have influenced both the moral and social nature of individuals and the character and nature of human cultures. The third question seeks to find out whether, and to what degree, humans have during their long tenure of the earth changed it from its hypothetical pristine condition.

(Andrew Goude, *The human impact on the natural environment.* Basil Blackwell, 1981)

In many of the above examples, the voices of the other writers have been heard mainly through summaries of their work.

However, in extract 4 you can hear the direct voice of Kemper directly through the use of his actual words in a quotation. Again, there are two clear voices in the extract: the voice of Paul Wright, the author, claiming that the differences between engineers and technologists is not clear, and the voice of Kemper - in a quotation - providing support for this claim

Extract 4

The functional differences between technologists and engineers are likewise blurred. Kemper (1982: 87) explains:

Technologists are supposed to work in that part of the engineering spectrum which lies between the engineer and the technician, in the routine aspects of product development, manufacturing planning, construction supervision, or technical sales. However, as is often the case, individual human talents may prove to be more important than the intentions of educational programs, and it has been observed that many persons educated as technologists have actually emerged in industry functioning as engineers. Since their educations bear strong resemblances to those of engineers, such a development should not be especially surprising.

(Paul H Wright, *Introduction to engineering.* John Wiley, 1989)

Finding your own voice

See: Taking a stance

Exercise

Try this exercise:

Exercise 1

^

Taking a stance

Introduction

In higher education, you need to be able to write critically. As well as giving the facts, you need to be able to make use of these facts to come to general conclusions. These conclusions need to be justified and supported by evidence. You also need to be aware of other points of view that exist and this must be dealt with.

Read the following sentence:

Previous studies (Jones, 1997; Smith, 2006) have indicated that the intensity of physiotherapy provision may affect some patient outcomes including reduced mortality following a stroke.

In academic writing, it is often necessary to make it clear to your reader what opinion you hold or what your position is with regard to a certain issue. This is often called your "voice" or your "position" or your "claim". It may be based on other people's research (eg, Smith & Jones), but the conclusion you have come to is your own.

As a student, it is not enough to simply describe a situation or recall the facts, you need to take a stance or position yourself in relation to the situation or the facts. This is particularly important in assessment when you have to answer a question. Of course, you need to know and reproduce the information, but you also need to use the information to give an answer to the question, to give YOUR answer to the question.

In the sentence above, the words "indicate", "may" and "some" show the writers position towards the previous studies. Instead of "indicated", the words "shown", proved" or "suggested" could have been used. The word "may" might have been replaced by "could", "will" or nothing. "Some" was chosen, where "many", "few" or "most" were also possible.

Expressing your voice

You can show your position with respect to a particular issue by:

- Showing how confident - or not - you are with regard to your position.
- Being explicit about the relationships you are discussing.
- Indicating the strength of your claim.

Showing confidence

> It was clearly proposed not as a permanent arrangement, but as a temporary measure of co-operation between different individual.

> This latter point was perhaps the greatest concern for Britain's aviation planners as the war went on.

You can be cautious through the use of hedges such as "perhaps", "maybe", "could", "might".

You can be confident through the use of boosters such as "definitely", "will", "must", "cannot".

See: Expressing degrees of certainty

Being explicit about relationships

You can show your position towards the relationships in the text.

If you think two ideas are almost the same, be explicit about it

Marx referred throughout his work to other systems than the capitalist system, especially those which he knew from the history of Europe to have preceded capitalism; systems such as feudalism, where the relation of production was characterized by the personal relation of the feudal lord and his serf and a relation of subordination which came from the lord's control of the land. Similarly, Marx was interested in slavery and in the classical Indian and Chinese social systems, or in those systems where the ties of local community are all important.

If you intend your sentence to give extra information, make it clear.

He is born into a family, he marries into a family, and he becomes the husband and father of his own family. In addition, he has a definite place of origin and more relatives than he knows what to do with, and he receives a rudimentary education at the Canadian Mission School.

See: Writing paragraphs: signalling

Indicating the strength of your claim.

You can show your position with regard to the points of view or the evidence that you have presented.

Research suggests that we have at least four types of memory.

or:

Research shows that we have at least four types of memory.

See: Citing sources

Here are some other words and phrases that you can use to show your position:

1	Introductory verbs	e.g. seem, indicate, suggest
2	Thinking verbs	e.g. believe, assume, suggest
3	Reporting verbs	e.g. claim, find, confirm, assert
3	Evaluative adjectives	e.g. important, misguided, wrong, misguided, inaccurate, incorrect

4	Evaluative adverbs	e.g. accurately, unsatisfactorily
5	Adverbs of frequency	e.g. often, sometimes
6	Modal verbs	e.g. will, may, might, could
7	Modal adverbs	e.g. certainly, definitely
8	Modal adjectives	e.g. certain, definite
9	Modal nouns	e.g. assumption, possibility
10	Signalling words	e.g. furthermore, similarly

Example

Read the following example from the field of Physiotherapy and identify words that show the author's position:

Patellofemoral disorders are amongst the most common clinical conditions encountered in the sporting and general population. Patellofemoral pain is usually described as diffuse, peripatellar, anterior knee pain. Symptoms are typically aggravated by activities such as ascending or descending stairs, squatting, kneeling, running and prolonged sitting.

A wide variety of disorders may fall under the umbrella term of patellofemoral pain. As a result, a thorough systematic evaluation of the patient's lower extremity alignment, patellar mobility and alignment, muscle flexibility, strength, co-ordination, soft tissue and articular pain is important in determining the possible causes of patellofemoral pain and prescribing an optimal rehabilitation programme. Management of patellofemoral pain syndrome often includes reduction of pain and inflammation through cryotherapy, heat therapy, massage therapy, muscle flexibility and strength training (especially quadriceps), patellar taping, bracing, orthotics, correction of abnormal biomechanics or other causative factors, acupuncture and surgery.

(From: The effect of medial patellar taping on pain, strength and neuromuscular recruitment in subjects with and without patellofemoral pain. By Janet H. L. Keet, Janine Gray, Yolande Harley, & Mike I. Lambert. *Physiotherapy, 93* (2007) 45–52.)

Examples are:

Patellofemoral disorders are amongst the most common clinical conditions encountered in the sporting and general population. Patellofemoral

pain is usually described as diffuse, peripatellar, anterior knee pain. Symptoms are typically aggravated by activities such as ascending or descending stairs, squatting, kneeling, running and prolonged sitting.

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Exercise

Try this exercise:

Exercise 1

^

Using theory

Introduction

It is clear that in academic life, theory is vitally important. If you do not situate your work in theory, it will not be taken very seriously, or, if you are a student, it will be marked down. Your claims need to be supported with theory and you need to compare your claims with theories and results reported in the literature.

What is a theory

A theory is a coherent explanation or interpretation of one or more phenomena.

As well as the word "theory", academic researchers use other terms to refer to their explanations and interpretations of phenomena.

- A **perspective** is a wider approach. It is more general than a theory.

- A **model** is a narrow, simpler explanation or interpretation of a specific phenomenon. it is judged on how useful it is.
- A **hypothesis** commonly refers to a prediction or a hunch about a new phenomenon. It needs to be tested
- A **theoretical** framework can be as wide as a perspective or a narrow as a model.

It is important to be careful about the use of the word "theory". In everyday use, "theory" means a guess or a hunch, something that needs to be proved. In academic English, this would be called a hypothesis.

In the academic world, a theory is not a guess or a hunch. It's "a well-substantiated, well-supported, well-documented explanation for our observations" (Baumeister & Bushman, 2014, p 15). It pulls together all the facts about something and provides an explanation that combines all the observations and can be used to make predictions. In the academic world, a theory is the ultimate goal and it is as close to proved as anything in science can be.

It is also important not to confuse the following:

- **Fact**: Facts are observations about the world around us.
- **Hypothesis**: A tentative explanation for a phenomenon made as a starting point for investigation.
- **Law**: A general description about how some aspect of the world behaves under certain circumstances.
- **Theory**: A well-substantiated explanation acquired through the scientific method and repeatedly tested and confirmed through observation and experimentation.

What are theories for?

The purpose of a theory is to provide accurate explanations and/or interpretations of phenomena.

Three other purposes of theories are (Thomas, 2007):

- ### Organisation

  Theories are used to organise phenomena in ways that help us to think about them clearly and efficiently.

- ### Prediction

Theories also allow us too make predictions about what will happen in future situations.

- **Generation of new research**

  Theories are also used to generate new research by raising new questions.

Types of theory

According to Dubin (1969), theories have two distinct goals:

- **Prediction**
- The theory has predictive power.In other words, it focusses on outcomes. An example is Maslow's hierarchy of needs.
- **Understanding**
- The theory specifies rules that account for and explain all observed arrangements of the data. It focusses on the processes of interaction of the data. Examples are SWOT and PESTLE.

Use of theories

A) Describing

Involves: Naming, describing & defining.

You should name the relevant theory or theories, and provide an appropriate reference. It show that you know about the theory.

B) Understanding

Involves: Naming, describing & defining.

You should name the relevant theory or theories, provide an appropriate reference, and explain how it works. It show you understand the theory.

C) Locating

Involves: Naming, describing, defining and locating.

You should name the relevant theory or theories, and provide an appropriate reference, and explain how your work is connected to it. It show you understand the theory and how your research is situated in and informed by theory.

D) Analysing and discussing

Involves: Naming, describing, analysing and explaining.

You should name the relevant theory or theories, and provide an appropriate reference, and explain how it is composed and how it is related to other theories. It shows you understand the theory by using it to explain or understand a real world issue.

E) Applying

Involves: Naming, describing, defining, discussing, analysing and applying.

You should name the relevant theory or theories, and provide an appropriate reference, discuss it and apply it to a real world issue. It shows that you understand the theory by applying it to a real world issue, or linking it relevantly to a real world issue.

F) Justifying

Involves: Naming, describing, analysing and justifying.

You should name the relevant theory or theories, and provide an appropriate reference, apply the theory to a real world issue to justify it. It shows you can use the theory to justify a real world issue.

G) Predicting

Involves: Naming, describing, analysing and predicting.

You should name the relevant theory or theories, and provide an appropriate reference, discuss the theory, apply it and use it to discuss the future. It shows you can use the theory to predict something in the real world.

H) Synthesising

Involves: Naming, describing, Synthesising and applying.

You should name the relevant theory or theories, and provide an appropriate reference, relate the theory to other theories and real world issues. It shows you understand the theory by applying it to a real world issue, and Synthesising it with a real world issue.

I) Evaluation

Involves: Naming, describing, analysing and evaluating.

If you evaluate something, you judge how good or bad it is or how useful it is – in your context. You can use the theory to evaluate a real world issue or use the real world .

J) Testing

Involves: Naming, describing, analysing and testing.

If you test something, you judge how good or bad it is or how useful it is – in your context. Academic testing is usually detailed and requires you to analyse a situation or issue first, and then assess the theory in your context.

K) Building

Involves: Naming, describing, analysing, testing and developing.

If you build on something, you develop and make it better – in your context. You should describe and analyse the theory first, and then show how you develop the theory to make it more applicable to your context.

Examples

Bloom's Taxonomy of cognitive objectives (1956) has been around for a long time. Since 1956, it has served as a guide for teachers to think about how they can design lessons that will help their students to think critically. Basically, the taxonomy designed by Benjamin Bloom and his colleagues provides a way to describe levels of thinking. The taxonomy is essentially a hierarchy, with knowledge as the first level and evaluation as the sixth level.

One of the most powerful ways of understanding human motivation was developed by Maslow (1954). According to Maslow, human beings have a variety of needs (concepts), some more fundamental than others. Maslow grouped these needs into five basic categories (constructs), arranged hierarchically from "lower" to "higher" (propositions). Lower needs dominate behavior when they are not satisfied. Higher needs become salient only after the lower needs have been satisfied. From these concepts, constructs, and propositions, Maslow concluded that behavior is an expression of one's drive to reduce deficiencies by gratifying the most salient type of needs (theory).

Maslow, A. H. (1954). *Motivation and personality*. New York, NY: Harper & Row.

In addition to the direct effects discussed above, we also examined the indirect effects of positive and negative feedback on job satisfaction. We used the competing models analysis suggested by Singh et al. (1994) to study this effect.

Brown's (2012) theory of employee motivation provides a useful analytical framework of factors which might impact on workplace motivation in general. However, it may be that the criteria he uses are too limited in scope. For example, the theory does not include any affective criteria. The present study investigated the extent to which the quality of the social experience associated with the workplace is also going to be an important motivational factor for employees.

The socio-cultural environment (Aguillar, 1967) includes aspects, such as, consumer demographics, demands and tastes. These vary with social trends and disposable income, and can therefore provide both opportunities and threats for companies. ABC company have already had to change their New Product Development (NPD) policy to respond to an ageing population. This may also mean that they will have to change their marketing strategies and long term strategic goals to fully address this demographic.

Aguilar, F. J. (1967). *Scanning the business environment*. New York: Macmillan.

The task performance of six teams of four individuals identified as shapers by the Team-Role Self-Perception Inventory (Belbin, 1981), was compared with that of six mixed teams of four individuals; one co-ordinator, one plant, one completer finisher, and one team worker. It was found that consistent with Belbin's proposal the "mixed" teams performed better than teams consisting of shapers alone.

Prichard, J. S. & Stanton, N. A. (1999). Testing Belbin's team role theory of effective groups. *Journal of Management Development, 1*8(8), 652 – 665.

This paper set out to examine the psychometric properties of the extensively used, but little tested, Belbin (1981) Team-Role Self-Perception Inventory which examines how people behave in teams. The original 56-item inventory was given to over 100 people from a variety of backgrounds in a non-ipsative Likert scaling form.

…. the alpha coefficients were modest and the factor analysis suggested a more simple solution than suggested. Team-role scores did not correlate significantly with a large number of demographic factors any more than may be expected by chance.

Furnham, A., Steele, H. & Pendleton, D. (1993). A Psychometric assessment of the Belbin team-role self-perception inventory. *Journal of Occupational and Organisational Psychology, 66,* 245-257.

In Tuckman and Jensen's (1977) model, a team that survives will go through these stages many times. As new members join, as others leave, as circumstances or the task change, new tensions arise that take the group back to an earlier stage. A new member implies that the team needs to revisit, however briefly, the forming and norming stages. This ensures the new member is brought psychologically into the team and understands how they are expected to behave. A change in task or a conflict over priorities can take a group back to the storming stage, from which it needs to work forward again. The process will, therefore, be more like Figure 17.6 than the linear progression implied by the original theory.

Body, D. (2005). Management: An introduction. London: Prentice Hall.

Tuckman & Jensen's (1997) stages of group development particularly apply to relatively small groups (3 to 12 people). This study investigated how group dynamics would evolve in larger groups. It appears that group processes do not evolve as linearly as Tuckman & Jensen describe as they tend to evolve more cyclically.

Body, D. (2005). Management: An introduction. London: Prentice Hall.

SWOT analysis (Stanford Research Institute, 2005), which delves into a business's strengths, weaknesses, opportunities, and threats, is used widely in firms and classrooms to distil fragmentary facts and figures into concise depictions of the strategic landscape. Yet despite its popularity and longevity, the SWOT approach to situation assessment often is ineffective. This study has critiqued the SWOT framework and proposed Defensive/Offensive Evaluation (DOE) as an effective alternative.

Stanford Research Institute (2005). SWOT analysis for management consulting. *SRI Alumni Association Newsletter*, December 2005.

The finding that performance is superior for moderate incentives relative to very high incentives is consistent with the "Yerkes–Dodson law" (Yerkes and Dodson, 1908), according to which, beyond an optimal level of arousal for executing tasks, further increases in arousal can lead to a decrement in performance.

Yerkes, R. M, & Dodson, J. D. (1908). The relation of strength of stimulus to rapidity of habit-formation. *Journal of Comparative Neurology and Psychology, 18*, 459–482.

Ariely, D., Gneezy, U., Loewenstein, G. & Mazar, N. (2009). Large stakes and big mistakes. *Review of Economic Studies, 76*, 451–469.

Language

Statement of Theory

Before you can discuss/apply a principle/model/theory, you need to present it and explain it, at the same time making it clear from whom and where you have obtained the ideas you are discussing . For example

According to Darwin's (1859) ...

Porter's (1980) Five Forces model refers to ...

The Theorem of Pythagoras states that ...

Brown (1983, p. 231) states that ...

Here are some more expressions you can use to introduce and explain a theory or principle.

The work of X indicates that ...

The work of X reveals that ...

The work of X shows that ...

Turning to X, one finds that ...

Reference to X reveals that ...

In a study of Y, X found that ...

As X points out, ...

As X states, ...

As X has indicated, ...

A study by X shows that ...

X has drawn attention to the fact that ...

X correctly argues that ...

X rightly points out that ...

X makes clear that ...

According to X...

It is the view of X that ...

The opinion of X is that ...

In an article by X, ...

Research by X suggests that ...

X has expressed a similar view.

X reports that ...

X notes that ...

X states that ...

X observes that ...

X concludes that ...

X argues that ...

X found that ...

X discovered that ...

Application

You can then apply it to your own context.

This seems to indicate that...

This means that ...

Therefore ...

According to this theory ...

Here we see ...

From this, we can understand ...

In other words ...

It follows that ...

The implications are therefore that ...

It must therefore be the case that...

The indications are therefore that...

It is clear therefore that ...

On this basis it may be inferred that...

Given this ..., it can be seen that...

As a result ...

As a consequence ...

This leads to ...

Concluding

In short, In a word, In brief, To sum up, To conclude, To summarise In conclusion, On the whole,	....

Altogether, In all,	

It is	generally widely	accepted argued held believed	that ....

Therefore, Thus, On this basis, Given this,	it	can may	be	concluded deduced inferred	that... .

From	Table 1		it	can may	be	seen concluded shown estimated calculated inferred	that ....
	the	table figures data results information					

In conclusion, Finally	we/may say it can/may be said	that ....

Further details

- **Evaluating theories**

You can evaluate theories.

See:Writing Functions 12: Evaluating

- **Indicating a gap**

You can use theories to justify the present or further work by indicating a gap.

See: Writing Functions 19: Indicating a Gap

- **Comparing & Contrasting**

When you are working with theories, you will compare and contrast the different ideas and your own, discussing advantages and disadvantages.

See: Writing Functions 13: Comparing

- **Synthesising**

You will need to summarise other people's ideas, combine them with theories and come to conclusions.

See: Writing Reporting Synthesis

- **Generalising**

In most cases, the conclusions you come to from your theories and the points of view you hold will be qualified and generalisations will be made.

See: Writing Functions 14: Generalising

- **Expressing degree of certainty**

You may also have different degrees of certainty about your claims based on your theories.

See: Writing Functions 15: Certainty

- **Arguing and discussing**

Theories will usually be involved in providing evidence to support your points of view and conclusions in an argument.

See: Writing Functions 11: Arguing and discussing

- **Providing support**

You can use theories to provide evidence to support your points of view and conclusions.

See: Writing Functions 18: Supporting

- **Analysis**

One thing that you learn in higher education is how to analyse. It is an essential part of writing critically. You can analyse theories.

See: Writing Functions 17: Analysis

- **Supporting an argument: Illustrating and exemplifying ideas**

You can use theories as examples or illustrations to support your conclusions.

See: Writing Functions 8: Examples

- **Giving reasons and explanations**

And you will always give reasons and explanations for your claims and points of view. Theories can be used.

See: Writing Functions 16: Reasons

- **Drawing conclusions**

At various stages during your writing, you will need to sum up your argument and come to a conclusion based on your theories.

See: Writing Functions 23: Concluding

Persuasion

Introduction

Persuasion is an important aspect of all academic writing. Although it is often said that, for example, the main purpose of a scientific research article is to present an account of the procedure followed without any kind of judgement in order for the procedure to be repeated, as Susan Hunston has made clear in the case of experimental reports (1994), the main goal of reports of experiments is persuasion. Their aim is to persuade the reader to accept the new knowledge claims.

As people are not persuaded until they are convinced that something is true, the act of persuading involves showing how something is true or how it can be shown to be true.

In a typical research article, for example, the persuasive goal of each stage of an academic or business report: can be summarised as follows

The purpose of the introduction section is to convince the reader that the research is necessary and useful.

The purpose of the methods section is to convince the reader that the research was done well.

The purpose of the results section is to convince the reader that, for example, the statistical methods used were useful and informative.

The purpose of the discussion section is to convince the reader that the results make sense and contribute to a consistent body of knowledge

Or in the case of student writing, the purpose of the student text is to convince the reader - for example, the lecturer - that the assignment purpose has been achieved.

The persuasion, though, is usually implicit. The opinions that are usually associated with the language of persuasion are usually lacking in formal academic writing. As Latour & Woolgar (1986, p. 240) emphasise " the result of rhetorical persuasion ... is that the participants are convinced that they have not been convinced."

Since people are not persuaded until they are convinced that something is true, the act of persuasion involves demonstrating how something is true or how it can be shown to be true.

In order to be convincing, you need to:

Make your claims clear.

This could involve:

- Defining
- Taking a stance
- Expressing degree of certainty
- Expressing reasons and explanations
- Generalising
- Discussing

- Recommending

Supporting

This can be done by

- Giving examples
- Including tables and charts
- Presenting findings from statistical analyses
- Presenting findings from interview

As well as comparing your claims to others.

- Comparing and contrasting: similarities and differences
- Evaluating other points of view

In order to

- Draw conclusions
- And practical implications

Introducing

The purpose of the introduction is to show your reader what you are doing in your writing. It is also helpful to explain why you are doing it and how you are doing it.

In many parts of your writing - but especially in introductions - you may need to provide background information and introduce new concepts or ideas and provide a description of how you are going to proceed in the rest of your writing.

In the following text, after giving some background information to justify the research, sentence 10 introduces the rest of the report:

Use Of A Writing Web-Site By Pre-Masters Students On An English for Academic Purposes Course.

A. J. Gillett, University of Hertfordshire

Introduction

[1]During the past 10 years, the availability of computers in educational institutions has increased dramatically (James, 1999). [2]Progress in computer development has

been made to the point that powerful, inexpensive computers with large capacities are available in many classrooms and libraries for student use. [3]Many students also have purchased and are purchasing computers for their own use at home. [4]Most studies seem to agree that the microcomputer will continue to hold an important role in education in the future. [5]For example, James (1999) and Smith (2000) suggest large increases in the numbers of computers both in educational institutions and the home in the near future. [6]As far as education is concerned, Shaw (2001) identified three main uses of computers: the object of a course, an administrative tool, and a means of providing instruction. [7]Fish and Cheam (2002) cite four uses of computers as a means of providing instruction: exercise, tutorial, simulation and problem solving. [8]A wide range of computer programmes are now therefore available in all these areas for individual and classroom use.

[9]However, even though many studies have reported an increased use of computers in education, there has been very little research reported on the effectiveness of such use. [10]The purpose of the present study is therefore to ascertain the effectiveness of using computer-assisted instruction as compared to traditional classroom instruction in an EAP writing class.

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Useful phrases are.

- The purpose of this paper is to ...
- The purpose of this investigation is to ...
- The aim of this paper is to ...
- This paper reports on the results obtained ....
- This study was designed to ...
- In this paper, we give results of ...
- In this paper, we argue that ....
- This paper argues that ....

- We have organise the rest of this paper in the following way ....
- This paper is structured as follows ....
- The remainder of this paper is divided into five sections ....

Using previous research

Introduction

One of the most important aspects of academic writing is making use of the ideas of other people. This is important as you need to show that you have understood the materials and that you can use their ideas and findings in your own way. In fact, this is an essential skill for every student. Spack (1988, p. 42) has pointed out that the most important skill a student can engage in is "the complex activity to write from other texts", which is "a major part of their academic experience."

is very important when you do this to make sure you use your own words, unless you are quoting. You must make it clear when the words or ideas that you are using are your own and when they are taken from another writer. You must not use another person's words or ideas as if they were your own: this is Plagiarism and plagiarism is regarded as a very serious offence.

The object of academic writing is for you to say something for yourself using the ideas of the subject, for you to present ideas you have learned in your own way. You can do this by reporting the works of others in your own words. You can either paraphrase if you want to keep the length the same, summarise if you want to make the text shorter or synthesise if you need to use information from several sources. In all cases you need to acknowledge other people's work, and provide a list of references.

This is particularly important in your literature review, where you introduce other work and in your discussion, where you compare your own work to that of others.

Using previous research

by, for example:

- presenting research findings,
- putting in context,
- presenting opinions,
- comparing & contrasting different authors,
- evaluating different authors in your context: strengths & weaknesses,
- agreeing & disagreeing,
- justifying, confirming & conceding,
- taking up a position.

Examples

Explanation and agreement.

This explains the positive relationship exhibited in our model and also reflects the findings of Mesch et al. (1994) regarding positive effects of negative feedback.

Difficulty, limitations

The nature of our sample makes it difficult to generalize results to sales forces in other industries. The predominance of men in these sales positions, though quite representative of the automobile industry, might obscure any gender-related issues in feedback research (Schul et al, 1990). Also, the causal directions of our model, though well-grounded theoretically, cannot be supported by cross-sectional data alone. Experimental designs or longitudinal studies would be necessary to check the directions of influence.

Srivastava, R. and Rangarajan, D. (2008). Understanding the salespeople's "feedback-satisfaction" linkage. J*ournal of Business & Industrial Marketing. 23*(3) pp. 151–160.

Agreement

Our findings support previous research regarding the relationship between feedback and satisfaction (Brown and Peterson, 1993; Kohli, 1985; Teas and Horrell, 1981)

Negative evaluation, support

The results, however, do bring to light a number of unanswered questions in this area of study, specifically that current technological trends that, with computer and Internet accessibility at an all time high on college campuses, may make it easier to engage in multiple activities while trying to study. Also, modern educational gurus such as Veen and Vrakking (2006) even promote this.

Kirschner, P. A. Karpinski, A. C. (2010). Facebook and academic performance. *Computers in Human Behavior, 6*, 1237–1245.

Justifying, negative evaluation, comparing authors

An obvious interpretation of our results is that all the estimates are essentially zero and the effects on English speakers in Dallas were observed by chance alone. Yet, the size of the results and the consistency with past research on the importance of reading books cast doubt on this as an explanation (Allington et al. 2010, Kim 2007).

Fryer, R. G. (2010). Financial incentives and student achievement: Evidence from randomized trials. *National Bureau Of Economic Research: Working Paper No. 15898*.

Positive evidence

Smith (1995) presents a convincing argument in favour of introducing a system for measuring performance.

Strong opinion

This point is reinforced in the EU Industrial Relations in Europe 2004 Report, which claims that 'coordination, based on shared understanding and mutual trust, may be more important than centralisation of wage-setting' (2004: 56). This clearly demonstrates that national peak-level employers' associations do play a key role in the process of collective negotiations.

Opinion

Meyer-Levy's previous research (1988) demonstrated that female employees tended to explore more detailed information before making decisions, while males relied on more general information, and their own opinions.

Negative opinion

Giddens (2000: 69) indicates that the 'knowledge economy' reflects the dominance of dynamic 'knowledge' sectors such as finance, computers and software, telecommunications, biotechnology and the communications industries, where highly skilled, flexible 'wired workers' are employed within collaborative small business networks in an entrepreneurial culture. Curry (1993), on the other hand, suggests that the 'new economy', a related term, is based on smaller firms, industrial districts, flexible firm strategies and production networks and flexible technology, which echoes the flexible specialisation thesis.

Support

In support of Mayo's opinion, Johnson (1949) stated that the group combination has important effect upon company programs

Support

The best approach to managing people seems to be dependent on the person and context in his model of human nature. Human nature is complex and malleable, and thus human needs differ between individuals. This contingency theory of motivation (Schein, 1992) confirms this view by suggesting that motivation varies on a case by case basis.

Support

Milanovic (2002) illustrates that well-run businesses are of benefit to society.

Negative evaluation.

Some studies, however, have shown that it is not necessarily distraction that is responsible for reducing pain but rather the emotional quality of the distractor. Positive stimuli, such as humour and laughter, are known to reduce pain perception (Cogan et al., 1987; Rotton and Shats, 1996) but increasing the attention required to complete cognitive tasks (distraction without emotion) does not (McCaul and Malott, 1984)

Disadvantage

The main disadvantage of these early classifications is that the emphasis on geological inheritance and sea-level history leaves only limited concern for the

hydrodynamic processes. The morphology of depositional coastal environments (those consisting of mud, sand and gravel, rather than eroding rocky shores) responds to the relative dominance of river, wave and tidal factors (Boyd el al., 1992)

Example, negative evaluation, tentative conclusion.

There is currently an ongoing debate in HRM about the role of HRM providers within companies. For example, there is a growing trend for HR Managers to participate more in the company strategic decision making process (Green, 2013). However, it is not clear whether this trend might have an adverse effect on the ability of HR to deal directly and effectively with employee related issues. It may be that this change of focus will have negative latent functions as Brown (2011) suggests.

Contextualisation.

In relation to Shenkar's (2001) 'illusion of symmetry', we can argue that UK/Polish difference and German/Polish difference demand to be understood in their own historical and specific context.

Chapman, M., Gajewska-De Mattos, H., Clegg, J. & Buckley, P. J. (2008). Close neighbours and distant friends: Perceptions of cultural distance. *International Business Review, 17*, 217–234.

Language

Reporting - Paraphrasing and Summarising

Reporting uses paraphrase and summary to acknowledge another author's ideas. You can extract and summarise important points, while at the same time making it clear from whom and where you have got the ideas you are discussing and what your point of view is. Compare, for example:

Brown (1983, p. 231) claims that a far more effective approach is ...

Brown (1983, p. 231) points out that a far more effective approach is ...

A far more effective approach is ... (Brown, 1983, p. 231)

The first one is Brown's point of view with no indication about your point of view. The second one is Brown's point of view, which you agree with, and the third is your point of view, which is supported by Brown

Here are some more expressions you can use to refer to someone's work that you are going to paraphrase:

If you agree with what the writer says.

The work of X indicates that ...

The work of X reveals that ...

The work of X shows that ...

Turning to X, one finds that ...

Reference to X reveals that ...

In a study of Y, X found that ...

As X points out, ...

As X perceptively states, ...

As X has indicated, ...

A study by X shows that ...

X has drawn attention to the fact that ...

X correctly argues that ...

X rightly points out that ...

X makes clear that ...

If you disagree with what the writer says.

X claims that ...

X states erroneously that ...

The work of X asserts that ...

X feels that ...

However, Y does not support X's argument that ...

If you do not want to give your point of view about what the writer says.

According to X...

It is the view of X that ...

The opinion of X is that ...

In an article by X, ...

Research by X suggests that ...

X has expressed a similar view.

X reports that ...

X notes that ...

X states that ...

X observes that ...

X concludes that ...

X argues that ...

X found that ...

X discovered that ...

Quoting

Sometimes you may want to quote an author's words exactly, not paraphrase them. If you decide to quote directly from a text, you will need an expression to introduce it and quotation marks will need to be used:

As X said/says, "... ..."

As X stated/states, "... ..."

As X wrote/writes, "... ..."

As X commented/comments, "... ..."

As X observed/observes, "... ..."

As X pointed/points out, "... ..."

To quote from X, "... ..."

It was X who said that "... ..."

This example is given by X: "... ..."

According to X, "... ..."

X claims that, "... ..."

X found that, "... ..."

The opinion of X is that, "... ..."

Concluding

After quoting evidence you reach a conclusion:

The evidence seems to indicate that...

It must therefore be recognised that...

The indications are therefore that...

It is clear therefore that ...

Thus it could be concluded that...

The evidence seems to be strong that...

On this basis it may be inferred that...

Given this evidence, it can be seen that...

Indicating a gap

Introduction

According to Cooley & Lewkowicz (2003, ch. 2), there are 5 main reasons for referring to the work of others:

1. .to acknowledge the work and ideas of others in order not to be accused of plagiarism;
2. to show your familiarity with the subject/context;
3. to discuss/evaluate/analyse other researchers - show your support for/refute other researchers' work;
4. to support your own ideas/points of view and give authority to your statements;
5. to create a research space by showing what has already been done and what has not been done.

5. Creating a research space

One way to indicate what research needs doing or what question still need answering - and therefore to prepare for the current piece of work - is to indicate a gap in current knowedge (Swales, 1981).

Example

Bradfield and Crockett (1995) concluded that there is little evidence to suggest that employees' attitudes bear any simple or appreciable relationship to performance on the job. However, by contrast, Herzberg et al (1957) provided a quite different conclusion: there is frequent evidence to suggest that positive job attitudes are favourable to increased productivity. Facing these contradictory opinions, the relationship between job satisfaction and job performance will be examined in detail.

During the past 10 years, the availability of computers in educational institutions has increased dramatically (James, 1999). Progress in computer development has been made to the point that powerful, inexpensive computers with large capacities are available in many classrooms and libraries for student use. Many students also have purchased and are purchasing computers for their own use at home. Most studies seem to agree that the microcomputer will continue to hold an important role in education in the future. For example, James (1999) and Smith (2000) suggest large increases in the numbers of computers both in educational institutions and the home in the near future. As far as education is concerned, Shaw (2001) identified three main uses of computers: the object of a course, an administrative tool, and a means of providing instruction. Fish and Cheam (2002) cite four uses of computers as a means of providing instruction: exercise, tutorial, simulation and problem solving. A wide range of computer programmes are now therefore available in all these areas for individual and classroom use.

However, even though many studies have reported an increased use of computers in education, there has been very little research reported on the effectiveness of such use.The purpose of the present study is therefore to ascertain the effectiveness of using computer-assisted instruction as compared to traditional classroom instruction in an EAP writing class.

Recently, a debate has begun over whether in-class laptops aid or hinder learning. While some research demonstrates that laptops can be an important learning tool, anecdotal evidence suggests more and more faculty are banning laptops from their classrooms because of perceptions that they distract students and detract from learning.

Workers in a wide variety of jobs are paid based on performance, which is commonly seen as enhancing effort and productivity relative to non-contingent pay schemes. However, psychological research suggests that excessive rewards can, in some cases, result in a decline in performance.

Language

A common way to indicate a gap is to use a "negative" subject. Negative subjects are chosen because they signal immediately to the reader that the previous text has come to an end. Note the following uses of *little* and *few:*

- However, little information/attention/work/data/research ....
- Nevertheless, few studies/investigations/researchers/attempts ....

- None of these reports, however, ...

A useful alternative is to use a contrastive statement.

- The research has tended to focus on ...,rather than on ....
- These studies have emphasised ...,as opposed to ....
- Although considerable research has been devoted to ... , rather less attention has been paid to ....
- The previous research ... has concentrated on ....
- Most studies have been content to ....
- So far, investigations have been confined to ...

More examples

However	little	information attention work research data	....
	few	studies investigations researchers attempts	

The research The previous research	has	tended to focus on concentrated on emphasised been devoted to	...,	rather than on as opposed to	....
These studies Most studies	have				

Although	the research considerable research the previous research	has	tended to focus on concentrated on emphasised been devoted to	...,	rather less attention has been paid to	....
	these studies most studies	have				

Plus negative words: little, few, inadequate, lack, insufficient, hardly.

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Presenting findings from statistical analyses

Introduction

A common feature of any kind of primary research is that empirical data is used to support arguments and claims. In quantitative research this evidence is almost entirely number-based statistics. In a study, such as a questionnaire study, you will need to analyse the results statistically and include your results in tables and graphs to illustrate and support your findings.

When writing about your findings in the results section of your report, it is important to remember that the purpose is to present the results of your data analysis. It is normally not appropriate at this stage to discuss these results. That takes place in the discussion and conclusions.

The primary purpose of the results section is to present the data in a standard way. It is important to structure the results section, addressing each hypothesis in order. The normal format is for the results of the research to be reported factually and formally without detailed analysis. Results are presented both verbally and with figures and tables to help understanding.

There are standard conventions to follow when reporting statistics. It is usual to start by providing an overview of the hypothesis to be tested and a description of the test(s) used. This is followed by descriptive statistics, such as central tendency and standard deviation/variance. These are then followed by the inferential statistics, such as *t*-tests or correlations. When

reporting the results of the findings from inferential tests, it is important to include the obtained value of the test statistic, the degrees of freedom, and level of probability with the implications for the null and alternative hypotheses. In addition, it is common for effect sizes to be reported.

This information is reported in a concise statement, such as:

> An independent-samples *t*-test was conducted to evaluate the hypothesis that using mental images produces a significant difference in memory performance. The group using mental images recalled more words (M = 25, SD = 4.71) than the group that did not use mental images (M = 19, SD = 4.22). This difference was significant, $t(18) = -3.00$, $p < .05$, two-tailed.
>
> (Gravetter & Wallnau, 1996, p. 299).

In the first sentence the hypothesis to be tested and the test used is introduced. In the second sentence, the mean (M = 25) and the standard deviation (SD = 4.71) are presented. The next sentence provides the results of the statistical analysis. Note that the degrees of freedom are reported in parentheses immediately after the symbol *t*. The value for the obtained *t* statistic follows (-3.00), and next is the probability of committing a Type I error (less than 5%). Finally, the type of test (one versus two-tailed) is noted.

> We have carried out an independent-samples t-test to compare the happiness scores for American men and women. There was a significant difference in scores for men (M = 1.76, SD = .69) and women (M = 1.83, SD = .63), $t(1502) = -2.20$, $p<.05$, but the magnitude of the difference in the means was very small (eta squared = .003), with sex explaining only .3 per cent of the variance in happiness
>
> (Dörnyei, 2007. p. 217)

In the first sentence the hypothesis to be tested and the test used is introduced. In the second sentence, the mean (M = 1.76) and the standard deviation (SD = .69) are presented. The next sentence provides the results of the statistical analysis. Note that the degrees of freedom are reported in parentheses immediately after the symbol *t*. The value for the obtained *t* statistic follows (-2.02), and next is the probability of committing a Type I error (less than 5%). Finally, the effect size (.003) is noted.

APA

According to the American Psychological Association (2001, p. 22):

When reporting inferential statistics (e.g., *t* tests, *F* tests, and chi-square), include information about the obtained magnitude or value of the test statistic, the degrees of freedom, the probability of obtaining a value as extreme as or more extreme than the one obtained, and the direction of the effect. Be sure to include sufficient descriptive statistics (e.g., per-cell sample size, means, correlations, standard deviations) so that the nature of the effect being reported can be understood by the reader and for future meta-analyses. This information is important, even if no significant effect is being reported. When point estimates are provided, always include an associated measure of variability (precision), specifying its nature (e.g., the standard error).

Null Hypothesis

To begin the quantitative research process, the researcher often states two opposing hypotheses:

- The first is the null hypothesis, or H_0. This hypothesis states that the treatment has no eflect, that there is no change, no difference, that nothing happened.

  The null hypothesis (H_0) predicts that the independent variable (treatment) has no effect on the dependent variable for the population.

- The second hypothesis is usually called the alternative hypothesis *(H_1)*. This hypothesis states that the treatment dies have an effect on the dependent variable.

  The alternative hypothesis (H_1) predicts that the independent variable (treatment) does have an effect on the dependent variable for the population.

After data collection, the researcher compares the data with the null hypothesis and makes a decision according to criteria established earlier. There are two possible decisions, and both are stated in terms of the null hypothesis.

- One possibility is that the researcher decides to reject the null hypothesis.

  In this case, the data provides strong evidence that the treatment does have an effect.

- The second possibility is to fail to reject the null hypothesis.

In this case, the data does not provide evidence that the treatment has an effect.

Rejecting or disproving the null hypothesis is a central task in modern scientific practice.

However, when you are writing about your findings, you will not usually write about the null hypothesis. In research reports, the researcher does not actually state that "the null hypothesis was rejected." Instead, you report that the effect of the treatment was statistically significant. Likewise, when H_0 is not rejected, you simply state that the treatment effect was not statistically significant or that there was no evidence for a treatment effect. In fact, when you read scientific reports, you will note that the terms null hypothesis and alternative hypothesis are rarely mentioned.

Findings are said to be statistically significant when the null hypothesis has been rejected. Thus, if results achieve statistical significance, the researcher concludes that a treatment effect occurred.

(Gravetter & Wallnau, 1996, chs. 8 & 9).

Example

Figure 1 shows the mean attractiveness ratings given by participants in each of the four experimental conditions: When participants were drunk, the attractiveness ratings were higher than when participants were sober, supporting the idea that the beer-goggles effect is alcohol dependent. The level of lighting appeared to have an effect in sober participants who rated the stooges as more attractive in dim lighting, M = 40.77, 95% CI [36.66, 44.77], than a light setting, M = 34.31, 95% CI [30.46, 38.65]; for drunk participants the differences between ratings in dim, M = 51.58, 95% CI [48.04, 55.00], and light, M = 55, 95% CI [51.15, 58.65], settings was less pronounced and in the opposite direction.

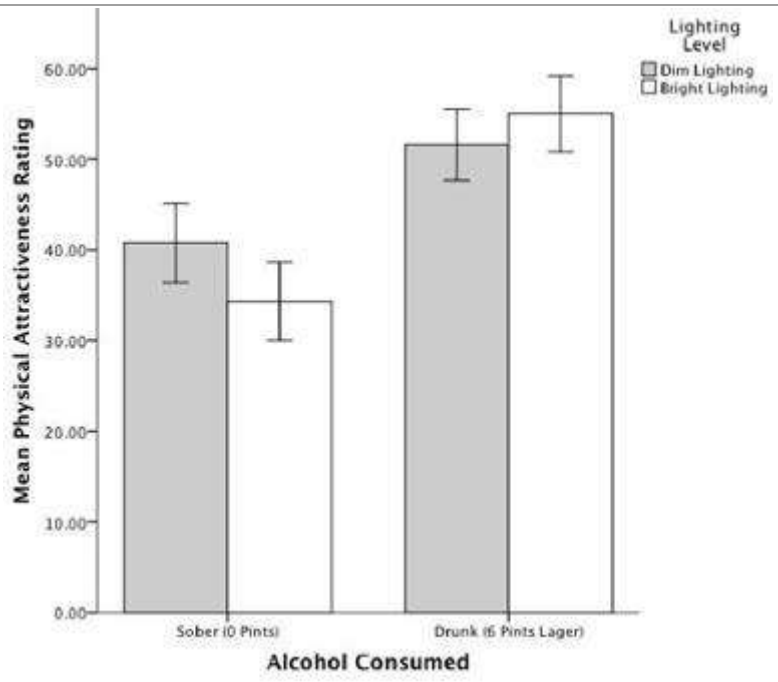


Figure 1. Graph showing the mean physical attractiveness ratings (and 95% confidence interval) given by participants when sober and drunk, and in dim and bright lighting.

A two-way 2 (alcohol: 0 pints or 6 pints) × 2 (lighting: dim vs. bright) repeated-measures ANOVA was conducted on the attractiveness ratings. This revealed a significant main effect of alcohol, $F(1, 25) = 68.64$, $p < .001$, $\omega 2 = .34$, indicating that attractiveness ratings were significantly higher when participants were sober. There was not a significant main effect of lighting, $F(1, 25) = 0.50$, $p = .484$, indicating that attractiveness ratings were similar overall in dim and bright conditions. The alcohol × lighting interaction was significant, $F(1, 25) = 8.82$, $p = .006$, $\omega 2 = .21$, indicating that difference in attractiveness ratings due to lighting was present in the sober participants but not the drunk ones.

(Field, A. (2016). *Discovering statistics*. London: Sage)

Examples from Textbooks

Presenting descriptive statistics

Mean sales for the organisation's 30 employees were £46,600. As the mean, median and mode are virtually the same, this suggests these data are normally distributed. Consequently the standard deviation of 18.46 indicates that 95 per cent of sales fell within the range £10,318 to £82,682, the complete range being £68,000.

(Saunders & Lewis, 2012, p: 178)

Presenting the strength of relationship between pairs of variables

There is a statistically significant strong positive relationship between the number of enquiries and the number of sales (r =.726, p < 0.001) and a statistically significant but weak to moderate relationship between the number of television advertisements and the number of enquiries (r =.362, p = 0.006). However, there is no statistically significant relationship between the number of television advertisements and the number of sales (r =.204, p = 0.131).

(Saunders, Lewis & Thornhill, 2012. p. 522)

Presenting the results from correlation

The relationship between perceived control of internal states (as measured by the PCOISS) and perceived stress (as measured by the Perceived Stress Scale) was investigated using Pearson product-moment correlation coefficient. Preliminary analyses were performed to ensure no violation of the assumptions of normality, linearity and homoscedasticity. There was a strong, negative correlation between the two variables, r = -.58, n = 426, p < .0005, with high levels of perceived control associated with lower levels of perceived stress.

(Pallant, 2010, p. 135)

A set of Pearson correlations were computed to determine if there were any significant relationships between a number of employee variables. The correlation between starting and current salary is +.735; this is significant at the .01 level. The null hypothesis can be rejected. Starting salary appears to provide a moderate guide to current salary as it predicts around 54% of current salary level. The remainder of the unexplained variance may involve inter alia qualifications/skills developed over the time period and differential opportunities for promotion.
The correlation between current salary and age is +.354; this is significant at the .05 level and the null hypothesis can be rejected. This relationship is not strong with a coefficient of determination only of around 12.5%, suggesting the existence of a number of other factors that influence the relationship, such as skill level and experience. The correlation between age and absence is -.148; this is not significant and indicates a random relationship. There is no evidence to suggest that absence is more frequent at one age rather than another.

(Burns & Burns, 2008, p. 354)

Presenting the results from regression

A linear regression analysis was conducted to evaluate the prediction of monthly sales value from floor area of a set of 14 branches of a large multiple store. The

scattergraph indicates that they are positively and strongly linearly related such that as floor area increases so does monthly sales income, in fact by $1,686 per sq mt. A histogram and residual plots indicate that linear regression assumptions are met. The strong relationship between the two variables was reflected in an R^2 of +0.954 and adjusted R^2 of 0.902. Approximately 90% of the variance of monthly sales value was accounted for by its linear relationship with floor space. The overall regression was highly significant with $F = 121.009$, $p > .001$. The regression equation for predicting monthly sales value is: Predicted monthly sales value = 901.247 + 1.686 (floor area in sq mts).

(Burns & Burns, 2008, p. 384)

Presenting the results from multiple regression

Hierarchical multiple regression was used to assess the ability of two control measures (Mastery Scale, Perceived Control of Internal States Scale: PCOISS) to predict levels of stress (Perceived Stress Scale), after controlling forthe influence of social desirability and age. Preliminary analyses were conducted to ensure no violation of the assumptions of normality, linearity, multicollinearity and homoscedasticity. Age and social desirability were entered at Step 1, explaining 6% of the variance in perceived stress. After entry of the Mastery Scale and PCOISS Scale at Step 2 the total variance explained by the model as a whole was 47.4%, $F(4, 421) = 94.78$, $p < .001$. The two control measures explained an additional 42% of the variance in stress, after controlling for age and socially desirable responding, *R* squared change = .42, *F* change (2, 421) = 166.87, $p < .001$. In the final model, only the two control measures were statistically significant, with the Mastery Scale recording a higher beta value (beta = -.44, $p < .001$) than the PCOISS Scale (beta = -.33, $p < .001$).

(Pallant, 2010, p. 167)

Reporting the output from chi-square for goodness of fit

A chi-square goodness-of-fit test indicates there was no significant difference in the proportion of smokers identified in the current sample (19.5%) as compared with the value of 20% that was obtained in a previous nationwide study, χ^2 (1, $n = 436$) = .07, $p = .79$.

(Pallant, 2010, p. 216)

Reporting the output from chi-square test for independence

A chi-square test for independence indicated no significant association between gender and smoking status, χ^2 (1, n = 436) = .34, p =.56, *phi* = -.03.

(Pallant, 2010, p. 222)

Presenting the results for independent samples *t*-test

An independent-samples t-test was run to determine if there were differences in engagement to an advertisement between males and females. There were no outliers in the data, as assessed by inspection of a boxplot. Engagement scores for each level of gender were normally distributed, as assessed by Shapiro-Wilks test (p > .05). Homogeneity of variances was violated, as assessed by Levene's Test for Equality of Variances (p = .013), so separate variances and the Welch-Satterthwaite correction were used. The advertisement was more engaging to male viewers (M = 5.56, SD = 0.35) than female viewers (M = 5.30, SD = 0.35), a statistically significant difference, M = 0.26, 95% CI (0.03, 0.48), t(37.998) = 2.325, p = .026.

An independent-samples t-test was conducted to compare the self-esteem scores for males and females. There was no significant difference in scores for males (M = 34.02, SD = 4.91) and females (M = 33.17, SD = 5.71; t (434) = 1.62, **p** = .11, two-tailed). The magnitude of the differences in the means (mean difference = .85, 95% 0: -1.80 to 1.87) was very small (eta squared = .006).

(Pallant, 2010, p. 243)

An independent-samples *t*-test was conducted to evaluate the hypothesis that smokers and non-smokers differ significantly in their self-concept levels. The mean self-concept score of non-smokers (M=46.61, sd = 11.17) was statistically significantly different (t = 21.579, df = 423.3, two-tailed p = .000) from that of smokers (M = 28.28, sd = 6.54). The effect size d = 2.09 implies a very strong effect.

(Burns & Burns , 2008. pp. 268-269)

Reporting the output for Mann-Whitney test

The Mann-Whitney U-test showed that there was no significant differen in absenecs rates in 2006 between male and female employees (U = 168.0, p = .413).

(Burns & Burns, 2008, p. 272)

Presenting the results for paired samples t-test

A paired samples t test (N = 40) was conducted to evaluate whether there was a significant difference between initial and current salaries. The mean scores between initial and current salaries differed significantly (t = 17.385, df = 39, p < .000) with

current salary having a significantly higher mean than the starting salon. The calculated effect size (*d*) was 2.75, indicating a large effect.

(Burns & Burns, 2008, p. 276)

Presenting the results from one-way between-groups ANOVA

A one-way analysis of variance indicated that there was a significant difference in happiness amongst white people (*M* = 1.77, *SD* = .60), black people (*M* = 1.97, *SD* = .65) and other races (*M* = 1.94, *SD* = .67), *F* (2, 1501) = 10.23, *p* < .001. The effect size was small (eta squared = .013). *S-N-K* post hoc tests showed that white people were significantly happier than members of the non-white races (black and other), *p* < .05, whereas the latter two groups did not differ from each other significantly.

(Dörnyei, 2007, p. 221)

Presenting the results from one-way between-groups ANOVA with post-hoc tests

A one-way between-groups analysis of variance was conducted to explore the impact of age on levels of optimism, as measured by the Life Orientation Test (*LOT*). Participants were divided into three groups according to their age (Group 1: 29yrs or less; Group 2: 30 to 44yrs; Group 3: 45yrs and above). There was a statistically significant difference at the *p* < .05 level in LOT scores for the three age groups: *F* (2, 432) = 4.6, **p** = .01. Despite reaching statistical significance, the actual difference in mean scores between the groups was quite small. The effect size, calculated using eta squared, was .02. Post-hoc comparisons using the **Tukey HSD** test indicated that the mean score for Group 1 (*M* = 21.36, *SD* = 4.55) was significantly different from Group 3 (*M* = 22.96, *SD* = 4.49). Group 2 (*M* = 22.10, *SD* = 4.15) did not differ significantly from either Group 1 or 3.

(Pallant, 2010, p. 255)

Examples from Published Research.

On average, participants reported that they took the evaluation process somewhat seriously (*M* = 6.81, *SD* = 2.78). However, on the forced choice question, only 20% of participants indicated that they took the evaluation process seriously all the time, and 4% of participants indicated that they never took the evaluation process seriously. The majority of participants (76%) indicated that they sometimes took the process seriously, but that at other times they just bubbled in answers in order to get done quickly.

Bassett, J., Cleveland, A., Acorn, D., Nix, M. & Snyder, T. (2015). Are they paying attention? Students' lack of motivation and attention potentially threaten the utility of course evaluations. *Assessment & Evaluation in Higher Education, 42*, 431-442.

The analysis revealed reliably higher percentages of overlap when participants were required to cite three sources (M = 10.26%, SD = 5.66) than when citations were optional (M = 4.76%, SD = 7.30), $F(1,85) = 8.35$, $p < .001$, $\eta^2 = .17$. Contrary to expectation, all three participants who were identified by the researcher as having committed plagiarism were assigned papers that required citations. Finally, there was no significant interaction between warnings and assignment type, $F(1,85) = .96$, ns.

Youmans, R. J. (2011). Does the adoption of plagiarism-detection software in higher education reduce plagiarism? *Studies in Higher Education, 36*, 749–761.

There was a significant effect of condition upon self-reported disgust [interpersonal, M= 5.33, SD = 0.44; outgroup, M> = 4.74, SD = 0.91; ingroup, M = 3.26, SD = 1.02, $F(2, 42) = 25.09$, $P < 0.01$, $\eta^2 = 0.54$]. As predicted, post hoc Tukey tests revealed that the disgust score was lower in the ingroup condition than in either the outgroup or interpersonal conditions (both $p < 0.001$) and that there was no significant difference between the interpersonal and outgroup conditions.

Reicher, S. D., Templeton, A., Neville, F., Ferrari, L. & Drury, J. (2015). Core disgust is attenuated by ingroup relations. *Proceedings of the National Academy of Sciences of the United States of America, 113*, 2631-2635.

Results indicate that laptop use by fellow students was the single most reported distracter (n = 229), accounting for 64% of all responses. This was significantly greater than all other responses combined (n = 130), χ^2 (1, N = 359) = 29.2, $p < .001$.

Fried, C. B. (2008). In-class laptop use and its effects on student learning. *Computers & Education, 50*, 906–914.

See also: Including tables and charts

Language

Descriptive

The average age of participants was ... (SD = ...).

"The average age of participants was 25.5 years (*SD* = 7.94)."

The age of participants ranged from ... to ... years (*M* = ..., *SD* = ...).

"The age of participants ranged from 18 to 70 years (*M* = 25.5, *SD* = 7.94). "

Age was non-normally distributed, with skewness of ... (*SE* = ...) and kurtosis of ... (*SE* = ...)

"Age was non-normally distributed, with skewness of 1.87 (*SE* = 0.05) and kurtosis of 3.93 (*SE* = 0.10)"

Participants were ... and ... aged, ... to ... years.

"Participants were 98 men and 132 women, aged 17 to 25 years (men: *M* = 19.2, *SD* = 2.32; women: *M* = 19.6, *SD* = 2.54)."

Test used

An independent-samples t-test was conducted to compare ...

"An independent-samples t-test was conducted to compare salary in manual and non-manual conditions."

An independent-samples t-test was run to determine ...

"An independent-samples t-test was run to determine if there were differences in engagement to an advertisement between males and females."

We have carried out an independent-samples t-test to compare ...

"We have carried out an independent-samples t-test to compare the happiness scores for American men and women."

A set of Pearson correlations were computed to determine ...

"A set of Pearson correlations were computed to determine if there were any significant relationships between a number of employee variables."

A paired samples t test (*N* = ...) was conducted to evaluate ...

"A paired samples t test (*N* = 40) was conducted to evaluate whether there was a significant difference between initial and current salaries."

A chi-square test was performed ...

"A chi-square test was performed to investigate the relationship between gender and salary."

Data were analysed using a mixed-design ANOVA with a within-subjects factor of ... and a between-subject factor of ...

"Data were analysed using a mixed-design ANOVA with a within-subjects factor of type of work (manual, semi-skilled, skilled, professional) and a between-subject factor of sex (male, female)."

A chi-square test of independence was performed to ...

"A chi-square test of independence was performed to examine the relation between ethnicity and subject interest."

A chi-square test of goodness-of-fit was performed to determine whether ...

"A chi-square test of goodness-of-fit was performed to determine whether the three types of car were equally preferred."

We ran a chi-square test to

"We ran a chi-squared test to examine whether gross national product (GNP) per capita of a country (GNPSPLIT) is related to its level of political freedom."

Correlational analyses were used to ...

"Correlational analyses were used to examine the relationship between the ages of younger and older participants' first memories and their scores on three psychometric measures."

Findings

A Mann-Whitney test indicated that ...

"A Mann-Whitney test indicated that self-rated intelligence was greater for women who were not working (*Md* = 5) than for women who were uworking (*Md* = 4), *U* = 68.5, *p* = .035, *r* = .39."

A chi-squared test was performed and ...

"A chi-square test was performed and no relationship was found between gender and the frequency of social talk, χ^2 (2, *N* = 170) = 1.10, *p* =.58."

A paired-samples t-test indicated that ...

"A paired-samples t-test indicated that scores were significantly higher for the salary scale (M = 26.4, SD = 7.41) than for the security scale (M = 18.0, SD = 9.49), $t(721)$ = 23.3, $p < .001$, d = 0.87."

An independent-samples t-test indicated that ...

"An independent-samples t-test indicated that scores were significantly higher for women (M = 27.0, SD = 7.21) than for men (M = 24.2, SD = 7.69), $t(734) = 4.30$, $p < .001$, d = 0.35."

An analysis of variance showed that ...

"An analysis of variance showed that the effect of noise was significant, $F(3,27) = 5.94$, $p = .007$."

...were positively correlated.

"Preferences for femininity in male and female faces were positively correlated, Pearson's $r(1282) = .13$, $p < .001$."

...were strongly positively correlated.

"Hours spent studying and GPA were strongly positively correlated, $r(123) = .61$, $p = .011$. "

... were moderately negatively correlated.

"Hours spent playing video games and GPA were moderately negatively correlated, $r(123) = .32$, $p = .041$."

We failed to find a significant correlation between ...

"We failed to find a significant correlation between their participants' personality scores at age 14 and their scores on the same items at the age of 77. "

... reported more ... than ....

"Students taking statistics courses in business at the University of Hertforshire reported studying more hours for tests (M = 121, SD = 14.2) than did UH students in in general, $t(33) = 2.10$, $p = .034$."

... a preference for ... over ....

"Results indicate a significant preference for cod and chips (M = 3.45, SD = 1.11) over haddock and chips (M = 3.00, SD = .80), $t(15) = 4.00$, $p = .001$."

Significance

Significant

For most research, a significance level of .05 is appropriate and is generally defined as being **statistically significant.** The .01 level is used in situations where you want to make a stong demonstration of treatment effect and is generally decribed as being **highly significant** (Gravetter & Wallnau, 1996, p. 243).

"This difference was significant, $t(18) = -3.00$, $p < .05$, two-tailed."

"S-N-K post hoc tests showed that white people were significantly happier than members of the non-white races (black and other), $p < .05$, whereas the latter two groups did not differ from each other significantly."

"Post-hoc comparisons using the **Tukey HSD** test indicated that the mean score for Group 1 ($M = 21.36$, $SD = 4.55$) was significantly different from Group 3 ($M = 22.96$, $SD = 4.49$). Group 2 ($M = 22.10$, $SD = 4.15$) did not differ significantly from either Group 1 or 3."

"Results indicate a significant preference for cod and chips ($M = 3.45$, $SD = 1.11$) over haddock and chips ($M = 3.00$, $SD = .80$), $t(15) = 4.00$, $p = .001$."

"All effects were statistically significant at the .05 significance level."

"With an alpha level of .05, the effect of age was statistically significant, $F(1, 123) = 7.27$, $p = .008$."

"The main effect of touch was non-significant, $F(1, 108) = 2.24$, $p > .05$. However, the interaction effect was significant, $F(1, 108) = 5.55$, $p < .05$."

"There was a significant difference in the scores for degree ($M = 4.2$, SD = 1.3) and no degree ($M = 2.2$, SD=0.84) conditions; t (8)=2.89, $p = 0.020$."

"Finally, there was no significant interaction between warnings and assignment type, $F(1,85) = .96$, ns."

"We found a highly significant association between schizophrenia and a COMT haplotype ($p = 9.5\times10-8$)".

Non-significant

"However, there is no statistically significant relationship between the number of television advertisements and the number of sales (r =.204, $p = 0.131$)."

"There was not a significant main effect of lighting, $F(1, 25) = 0.50$, $p = .484$, indicating that attractiveness ratings were similar overall in dim and bright conditions."

"This is not significant and indicates a random relationship. "

"The interaction effect was non-significant, $F(1, 24) = 1.22$, $p > .05$."

"The main effect of touch was non-significant, $F(1, 108) = 2.24$, $p > .05$. However, the interaction effect was significant, $F(1, 108) = 5.55$, $p < .05$."

"*S-N-K* post hoc tests showed that white people were significantly happier than members of the non-white races (black and other), $p < .05$, whereas the latter two groups did not differ from each other significantly."

"The effect of age was not statistically significant, $F(1, 123) = 2.45$, $p = .12$."

Conclusions

“These results suggest that salary really does have an effect on creativity at work. Specifically, our results suggest that when humans have a higher salary, they are more creative.”

"This suggests that smarter individuals have earlier first memories."

"The study showed that white people were significantly happier than members of the non-white races (black and other)."

"There is no evidence to suggest that absence is more frequent at one age rather than another.

Presenting findings from interviews

Introduction

In all kinds of primary research, empirical data is used to support your arguments and claims. In quantitative research this evidence is usually number-based statistics. Although numbers can also be used in qualitative research, the main form of evidence involves extracts from narrative accounts (interviews, focus groups, ...) of either the respondents or the

researcher (field notes, memos, ...) (Johnson and Christensen, 2004, p. 539).

If your data is mainly qualitative, it is important to include quotations from this data in your text. This will give your text authenticity, and will enable your reader to share the world you are analysing. However, it is important that any illustrations or quotations you use are relevant to your study (Collis & Hussey, 2003, p. 300).

It is also important to keep a balance between your own interpretation and the supporting evidence in the form of quotations from participants or notes. Good qualitative reports display a smoothly flowing, natural rhythm of text and quotes - too many quotes dampen the researcher's voice and make his/her argument difficult to follow, whereas too few quotes may provide insufficient support (Morrow, 2005).

Transcribing and Editing Quoted Material

Record exactly what is said, by whom, plus some indication of tone, pauses, body language, etc, if necessary. Remember that one hour of recording can take 6-10 hours of transcription time.

Transcribing

Saunders & Lewis (2012, p. 188) suggest the following:

- Include details of the date, time and place where the data was collected.
- Anonymise both the organisation's and the respondents' names, using the alternatives consistently.
- Use italics to signify questions asked.
- Use CAPITALS to highlight the names of the interviewer and the respondents.
- Use ... to show a pause in speech, the number of dots showing the relative length of the pause.
- Use CAPITALS within the transcript to show those words that were spoken more loudly than others.
- Use ( ) to enclose your description of what is happening such as the participant's tone of voice, facial expressions or other visual cues.
- Make sure there are no typographical errors and that words are spelt consistently throughout.
- Save each interview transcript as a separate file.

Editing

If necessary, you can edit the quotations. However, you need to make sure that you do not distort or misrepresent the meaning. There are also certain conventions that you need to follow (Richards & Morse, 2007, pp. 208-209):

- Avoid misrepresenting what was said, and indicate where text has been removed - with ellipses (...) - and where you have substituted words - by enclosing them in square brackets ([..]).
- Delete any quoted material that is redundant. Ask yourself if each phrase is necessary. A briefer quotation may be more powerful and much more relevant to your argument. If you think the participant is implying something, suggest this in your interpretive commentary.

You may also edit minor linguistic inaccuracies to facilitate reading, but if you decide to do so, you should note this clearly at the first occurrence or in the method section (Dornyei, 2007, p. 297).

Be Careful!

Transcription: I think unless we want to become like other countries, where people have, you know, democratic freedom.

Actual Words: I think unless we want to become like other countries, where people have no democratic freedom.

(Brymon & Bell, 2007, p. 493)

Anonymity

Ethics codes prohibit researchers from disclosing personally identifying information about participants. Therefore, you should:

Quote participants without distinguishing them at all, for example:

Indeed, a comment by one of our managers illustrates some of these complex issues: [quote follows without other attribution].

OR

Identify participants by demographic or other data:

At my age I think we know who we are and what we are. (Female participant, 69 years of age).

OR

Identify participants with letters (Participant A, Manager B), pseudonyms (Peter, Jenny), or by role (Doctor, Patient, Customer).

Including Interviews in your Report

First you need to transcribe your interviews.

Then you can add the transcribed interviews to the appendix. This will demonstrate that the interviews have actually taken place.

You should refer to the appendix when necessary:

The full transcript of this interview is included in Appendix 3 (on page 32).

The quotations are used to illustrate your research findings, and they need an introduction from you which tells your reader how they illustrate that finding. So you need to:

- Say what the finding is
- Introduce the quotation by saying who said it and in what context
- Give the quotation
- Comment on the quotation by comparing it to other quotations from the same person, other quotationss from different people on the same topic, etc.

There are two main ways of presenting data to illustrate your analysis.

1. The first is to present your interpretation of findings and then follow with a quotation to illustrate your description. This gives the reader the information to judge whether or not your interpretation represents the data.
2. Alternatively, you may present a quotation followed by your interpretation. This may show your ability to analyse in fine detail, but it could miss the overall picture.
3. Or, of course, a mixture of the two.

Quote explictly from your transcript to justify your choices:

Interviewee #3 stated that. "...the quality of education is enhanced by..." This was confirmed by respondents 11, 14 and 7 others.

This point has been confirmed by 75% of the interviews with 15 percent not venturing an opinion while 10% believed it is rather due to a stimulating curriculum.

Although you don’t need to include all your primary data, you should make it available in an appendix, to which you should refer when necessary. For example:

Details of all the interview participants can be found in Appendix A, with transcripts of each interview in Appendix B.

Appendices

Put here any data that was too extensive to incorporate earlier. In the text, for example, you might have included the tables / graphs that give the results of your analyses. In the appendices, you can give the raw data/transcripts to enable the reader to make their own analysis; plus lengthy transcripts of interviews or texts, questionnaires, interview guides, texts, ethocs forms, and so on.

Reporting Interview Data

Always attempt to contextualise quotations (Where did she say this? Who else was present? What question was she answering? What did she say before this? How does it relate to your overall argument?).

Make sure there is a good balance between your participants' quotations and your interpretation of the words.

An overemphasis on the researcher's interpretations at the cost of participant quotes will leave the reader in doubt as to just where the interpretations came from; an excess of quotes will cause the reader to become lost in the morass of stories (Morrow, 2005, p. 256).

Paraphrase or summarise

When you have added the interviews to the appendix, you can then paraphrase or summarise them in your report. Paraphrase is done as follows:

According to interviewee X (Appendix 1), the …

It became clear from an interview with Y that … (Appendix 1).

Quoting from interviews

If you literally copy the words of the interviewee, then you need to quote. Finding interesting quotes is easier if you know how to get usable

information out of the person during the interview. That's why you should conduct the interviews in a professional manner.

According to X (Personal communication, December 24, 2012) …

The following format is useful:

1. Short quotations in the text should be indicated by quotation marks.

2. Long quotes are set in an indented paragraph, or block quotes. (40 words is a common cut-off point for 'long' quotes.)

3. There are no *quotation marks* around block quotes.

4. Block quotes may start with the continuation of a sentence from the text:

A customer in his fifties said that

since the budget, life has become more difficult. …

5 .If the quote completes the sentence that introduces it, as in the example above, there is no colon. If the quote follows a complete sentence, a colon can be used to show that the quote is an illustration of that sentence.

One man claimed that 'life is much harder now'.

One man made the claim: 'life is much harder now.'

6. Square brackets - [..] - show the author's editing of the quote, e.g. from 'My company went into liquidation five years ago' to 'My company went into liquidation [in France] five years ago'.

7. Ellipses in square brackets […] can indicate omissions; ellipses without brackets indicate hesitation or unfinished sentences. It is important, however, to distinguish between the author's selective omissions and the interviewee's speech.

- 'My company… you know, it went into liquidation five years ago in France.' (Original quotation, with ellipses showing the interviewee's pause or hesitation.)
- 'My company… you know, it went into liquidation […] in France.'(Hesitation, clearly indicated.)
- 'My company […] went into liquidation five years ago in France.' (Shortening, clearly indicated.)

8 .More specific conventions for showing pauses, tone of voice, etc. exist, but are not commonly used in general writing.

9. Indicate who is speaking in the quotation, either introducing the speaker before the quote by saying something like 'As John put it,' or 'Anne explained her reasons for this:', or attribute the quote to the interviewee immediately afterwards, for example by writing their pseudonym or [Interviewee 1] in square brackets.

APA Style

Quotations From Research Participants

Quotations from participants whom you interviewed as part of your research are treated differently than quotations from published works. When quoting research participants, use the same formatting as for other quotations: Present a quotation of fewer than 40 words in quotation marks within the text ..., and present a quotation of 40 words or more in a block quotation .... Because quotations from research participants are part of your original research, do not include them in the reference list or treat them as personal communications; state in the text that the quotations are from participants. When quoting research participants, abide by the ethical agreements regarding confidentiality and/or anonymity between you and your participants. Take extra care to obtain and respect participants' consent to have their information included in your report. You may need to assign participants a pseudonym, obscure identifying information, or present information in the aggregate ....

Participant" Julia," a 32-year-old woman from California, described her experiences as a new mother as "simultaneously the best and hardest time of my life." Several other participants agreed, describing the beginning of parenthood as "joyful," "lonely," and "intense." Julia and the other participants completed interviews in their homes.

American Psychological Association (2020, p. 278)

Examples

Interpretation followed by quotation

The British, like the Germans, tended to see themselves as embodying a set of virtues, which the Poles might be encouraged to imitate. The British, however, were uniform in interpreting Polish shortcomings as a result of
the previous system of central planning. For example:

But that’s the characteristics of all the former COMECON economies, whenever there is much tougher competition they say that’s too difficult (H2_UK).

[...]We were late, we thought we were looking at a ready made facility, but it was lacking in international safety standards, it was run in the old communist way (H4_UK).

The British perceived the Poles to be in a process of rapid mental transformation, as the shadows of central planning disappeared.

[...] [Poles] are moving from ‘write me a rule’ people, from one type of society to another (K1_UK).

(Chapman, M., Gajewska-De Mattos, H., Clegg, J. & Buckley, P. J. (2008). Close neighbours and distant friends: Perceptions of cultural distance. *International Business Review, 17*, 217–234)

Campbell (1997) refers to an angle as a "perspective that dominates a story". In our study, research and writing was reported as always being guided by an angle. It was described as a "thrust" or "driving force" of an assignment - the new "twist" or "hook" that directs the story. An angle was also described as a proposition or statement. In the following extract one journalist relates this idea to the tragic events of the 11 September.

To start off with, there was the straight reporting of facts: a plane has hit the World Trade Center, then a second plane has hit the WTC ... The default angle is "what has happened" ... (QC).

Most notably though, an angle was often presented as a hypothesis or conjecture about something suspected of being the case, and this is one sense in which it can be understood as motivating subsequent information seeking. QC continued:

But this soon develops, the new "angle" comes into play. I remember on the day that by the time of the second plane, I and others were saying "This must be an act of terrorism, bemuse this is not coincidental, an accident ...". So had I been writing the story, I would have begun building up information to support my hypothesis that the acts of September 11 were terrorism. The standard journalistic questions of who, what, why, when, how would have been asked about the events against the backdrop of my hypothesis of terrorism.

And he summarises:

Essentially there is an angle to all news and features; it is really a working hypothesis that translates the gathered facts, which may include some speculation, into a coherent account (QC).

(Attfield, S. & Dowell, J. (2003). Information seeking and use by newspaper journalists. *Journal of Documentation, 59*(2), 87-204.)

Interestingly, above CJ indicated that originality checking is only one reason for this initial search. In many of the accounts of search activity, interviewees described pursuing multiple concurrent information goals. In the following, MG describes extending this initial search motivated by the goal of developing a better personal understanding of an issue:

Obviously the main interest is whether it has been in a British newspaper ... but I like to know whether it has been in the LA Times and the cutting might well tell you something useful anyway ... it might give you background on the stories ... things in the background that are not apparent to you when you are looking at the thing to write a story ...

And in the following extract, DI describes integrating originality checking with the gathering of potential content that she might later include in her copy[1]:

... the first thing you do is go into your database ... to find out if a similar story's been written before ... and erm ... just to see maybe if another story's touched on it in the past, say, that you can pull out bits from that and add it to your story.

In the model we present below, we show that alongside the goal of originality checking, the goals of constructing a personal understanding and generating potential content are active during the preparation phase of the assignment.

(Attfield, S. & Dowell, J. (2003). Information seeking and use by newspaper journalists. *Journal of Documentation, 59*(2), 87-204.)

The British respondents, by contrast, sought explanation of their Polish counterparts in the legacy of communism. Here is a British manager on the centralised nature of older Polish organisational structures:

In our company in Warsaw, where everyone has e-mail, fax, it’s very easy to communicate with everyone from the senior management to the shop floor. In the old state owned company there was only one fax in the office of the managing director, and everything had to go through him. We were trying to show that if it works well in 'Company I–Poland’ it could also work there [in Poznan] (I1_UK).

Chapman, M., Gajewska-De Mattos, H., Clegg, J. & Buckley, P. J. (2008). Close neighbours and distant friends: Perceptions of cultural distance. *International Business Review, 17*, 217–234.

Developing personal understanding

In our study, interviewees emphasised the importance of developing their personal understanding of an issue to support further information seeking and also to provide their readers with an informed interpretation of events. A science correspondent described the importance of background research in preparation for an interview:

I certainly wouldn't like to have spoken to him without having researched the subject before, because I didn't know anything about it and I wouldn't have known the questions to ask (GQ).

Developing a better personal understanding also facilitated more focused information seeking with respect to online cuttings archives. A junior news journalist said:

It's a question of finding out key points ... and then using Lexis[2] to investigate them further. You can home in on a particular issue (RK).

On background information facilitating an informed interpretation, MG said:

It just puts the whole thing in context and enables you to interpret the latest story in the light of what's gone before ... But you don't always have that knowledge yourself, so you have to acquire it from somewhere else.

(Attfield, S. & Dowell, J. (2003). Information seeking and use by newspaper journalists. *Journal of Documentation, 59*(2), 87-204.)

Though everyone said that intradivision relationships were the key topic to address, the team could not agree on a goal for the retreat and spent the first half of its life describing and rejecting a series of ideas. Statements 1-3 of the following excerpt show how little concrete progress the team had made halfway through its calendar....

Excerpt 6 (E6). The hospital administrators hold their fifth meeting, in the sixth week of a 12-week span.

1. Bernard (to Bill, just before the meeting): I'm gonna bring Tom [the division chief] to the next meeting, Bill. . . . Last time we were struggling like we are here - Tom [really helped] to sort things out . . . .
2. Bernard (convening meeting): . . . I think we need to . . . brainstorm about [the program] - see what we might come up with, and bounce it off Tom next time. (He recaps an idea he brought to the previous meeting.)
3. Sandra: We'd each be responsible for an hour of the program? As facilitators, or role playing - whatever we decided to do?
   (Later in the meeting, there was a dramatic shift in the discussion when Nancy described a management simulation program on the problems of middle managers, run by a consultant who worked nearby.)

4. Sandra: If awareness is all that comes out of the day . . . I think that's a good - a reasonable goal.

(Gersick, C. J. G. (1988). Time and transition in work teams: Toward a new model of group development. *The Academy of Management Journal, 31*, 9-41)

Even long blocks of uninterrupted time were not recognized as opportunities for deep concentration because they were not designated as such ahead of time. Only in retrospect did engineers know that they just had an extended period of time to accomplish substantive individual work. As one engineer described, "I am constantly looking over my shoulder, fearing that someone is about to throw something at me." Another engineer explained, "Working on Saturdays is much more productive .... I can sit down and work without always worrying that something is about to sidetrack me."

(Perlow, L. A. (1999). The time famine: Toward a sociology of work time. *Administrative Science Quarterly, 44*(1) , 57-81.)

Engineers complained that crises continuously arose. From their perspective a crisis was anything that had to be done urgently, taking time away from the work that they would have "normally" done to make progress on their individual deliverables. One engineer explained, "Every Sunday night I used to make a 'to do' list for the week. By Monday morning I was already off schedule. I ended up feeling so bad about it, I just decided the list wasn't worth it." Another engineer complained, "I can hardly get my coat off before the crises start.... Every morning my priorities seem to shift."

(Perlow, L. A. (1999). The time famine: Toward a sociology of work time. *Administrative Science Quarterly, 44*(1) , 57-81.)

Factors will likely vary in degrees of importance and priority from institution to institution and department to department. It behooves the administration of any particular institution, college, or department to know who their graduate students are. The graduate students themselves are likely to appreciate it. In this current study, there was much positive feedback from the students in the department of Educational Leadership and Counseling who participated in the study. Their comments were indicative of their belief that the department and faculty were interested in connecting. The following are excerpts from those responses.

"I am so glad that I took the time to answer the survey questions. Those questions further reinforced my purpose for obtaining my master's degree. I hadn't been asked to think about how my family has influenced my decision to go back to school. Yes,

they are constantly in the forefront of any decisions I make, but as I answered those questions, I was forced to evaluate what I am doing. Am I doing what's best for me and my family? How will obtaining a graduate level degree help me? The survey questions made me think about my values, my children and husband and parents, and what obtaining this degree will mean for my future and theirs as well. I also reflected on how important it has been for me to be taking these graduate classes with three of my colleagues. If it wasn't for them, I don't think I would be as focused or motivated to finish. They, along with my family, have become my driving force to accomplish this goal that I've had since I was 19 years old" (female graduate student).

"I feel very honored to get to voice my opinion on matters concerning grad school. I have had a very rewarding experience at TAMUK. I am a full time teacher and football coach and spend a lot of time on the job. TAMUK does their program in a way that my job and post graduate work can both win. I have never felt the courses I have taken have been a burden at all. Yes, they have taken some considerable time but it has always felt rewarding to do so. I have recommended this program to many others because of the great job your staff does" (male graduate student).

“As I am sure you already know, I believe the crucial factor in my success has been instructors that care, understand, and are involved with my education” (female graduate student).

"I just completed the survey. The content of the survey was important and made me feel like my opinions do matter to the university" (female graduate student).

"Throughout my graduate courses in which I have received a Master's in Early Childhood, completed all course work for a Master's in Administration (I just did not take the research classes) I have never sat down with an Advisor to take a look at a degree plan. Do not get me wrong I did have a degree plan signed and given to me although I just pretty much did it on my own. With the Counseling and Guidance I have felt a bit more supportive with my plan, and I can see that it is getting better" (female graduate student).

“After reading the consent to take the survey I was very pleased with the privacy and the reason behind the survey. As a graduate student it’s good to see professors trying to better things for the future students” (female graduate student).

While completing the survey I realized how much of an accomplishment is was for me to complete graduate school. At first it was something I wanted to do because it was the “next step.” I then realized that I wanted to do it for my family. I was the first in my family to complete college and so far have been the only one. I want to set higher standards for my children that way they can be successful as well. Most of the questions on the survey I had to strongly agree to. Family, religion, financial aid, professors, online/hybrid courses are just a few that really made graduating graduate school an attainable goal for me” (female graduate student).

(Bain, S., Fedynich, L. & Knight, M. (2009.) The successful graduate student: A review of the factors for success. *Journal of Academic and Business Ethics, 3*)

Quotation followed by interpretation

First Meeting and Phase 1

Almost immediately, in every team studied, members displayed the framework through which they approached their projects for the first half of their calendar time. Excerpts show the scope, variety, and nature of those frameworks.

Excerpt 1 (E1). A team of three graduate management students start their first, five-minute encounter to plan work on a group case assignment, defined by the professor as an organizational design problem.[4]

1. Jack: We should try to read the [assigned] material.
2. Rajeev: But this isn't an organizational design problem, it's a strategic planning problem.
3. (Jack and Bert agree.)
4. Rajeev: I think what we have to do is prepare a way of growth [for the client].
5. (Nods, "yes" from Jack and Bert.)

Excerpt 1, representing less than one minute from the very start of a team's life, gives a clear view of the opening framework. The team's approach toward its organizational context (the professor and his requirements) is plain. The members are not going to read the material; they disagree with the professor's definition of the task and will define their project to suit themselves.

(Gersick, C. J. G. (1988). Time and transition in work teams: Toward a new model of group development. *The Academy of Management Journal, 31,* 9-41)

The follow-up interviews indicated that the six students felt that they had not only improved but also gained confidence in writing emails in English; these observations can be seen in the following accounts by Keiko and Eri:

[1] Before taking this class, I did not have opportunities to write emails in English. So I didn’t know what they looked like, and my vocabulary choices were quite limited. However, as I read and analyzed a variety of email samples in this writing class, I learned some guidelines to draw upon and was able to develop my vocabulary choices. The increasing choices allowed me to see email writing as very enjoyable and to become confident in writing in English. (Keiko)

[2] Because I had no tools to refer to for email writing, I was very much afraid of email-writing activities when this course started. However, as I learned a variety of contexts for using the words that I had already known, I realized that email writing is not as difficult as had first thought. Above all, I found it very interesting to get a response from the reader of my email about what I wrote. This inspired me to write more and communicate more without being afraid of making mistakes. (Eri)

Extracts [1] and [2] provide an interesting insight into the nature of confidence and its relation to genre knowledge development. Both students recognize benefits gained in relation to confidence, but they experience this benefit for different reasons. Keiko's confidence was increased due to her improved knowledge of language choices, while Eri gained confidence due to her improved sense of audience. The results suggest that these types of benefits may not happen concurrently for the same individuals; the type of benefits received may depend on an individual's approach to writing and the factors considered when completing the genre-based tasks.

(Yasuda, S. (20110. Genre-based tasks in foreign language writing: Developing writers' genre awareness, linguistic knowledge, and writing competence. *Journal of Second Language Writing, 20*, 111–133.)

Excerpt 7 (E7). The following comes from an interview with the hospital team's leader:

He says "Do what you want. Spend what you want." Then he came to the damn meeting and was worried about money! Giving me mixed signals! That's when I decided, I'm gonna spend what I want and make my own decisions ... .

By the time the division chief met with the team, the decision to hire the facilitator - the largest expense - had already been made. It was "too late" to be "worried about money," and the team never checked its budget with the chief.

(Gersick, C. J. G. (1988).Time and transition in work teams: Toward a new model of group development. *The Academy of Management Journal, 31,* 9-41)

The following is a response to post 2, which clearly shows the "thesis-details" pattern:

3. teacher is to intiate spirit for me, i think that teacher is to intiate spirit.We have learned so many years. Now we know the method to grasp knowledge and the criterion to found our own moral. What we really need is the spirit to bestir us forward, a spirit lead us to pursue science and truth (SABRINAR)

The respondent, SABRINAR, first states the main point in the subject line as well as in the beginning of the body text, “for me, I think that teacher is to intiate spirit.” Then the respondent explains the reasons why a teacher needs to kindle the spirit of intellectual pursuit in students.

(You, X. (2008). Rhetorical strategies, electronic media and China English. *World Englishes, 27,* 133-149)

Others

I would not use public transport in the evening because the kids go to swimming and football which are miles apart (GD)

The bus is an extension of my social club really, all my friends are on the bus and we talk a lot, it’s also cheaper than getting a taxi to and from town you know (Interview 15).

When interviewing Mrs. Smith, she indicated how she handles her small business. (See Appendix A).

Using extracts to exemplify or support conclusions reached

The British respondents, by contrast, sought explanation of their Polish counterparts in the legacy of communism. Here is a British manager on the centralised nature of older Polish organisational structures:

In our company in Warsaw, where everyone has e-mail, fax, it’s very easy to communicate with everyone from the senior management to the shop floor. In the old state owned company there was only one fax in the office of the managing director, and everything had to go through him. We were trying to show that if it works well in 'Company I–Poland’ it could also work there [in Poznan] (I1_UK).

(Chapman, M., Gajewska-De Mattos, H., Clegg, J. & Buckley, P. J. (2008). Close neighbours and distant friends: Perceptions of cultural distance. *International Business Review, 17*, 217–234.)

In the critique that Gabrielle had written, she had cited many of the sources listed as recommended readings in the course outline. Gabrielle explained:

We were also going to present our critiques to the class as a whole, and I wanted to be prepared for the questions that the professor or other students might ask. I also

wanted to show that I had actually put time into the paper and read more than what everybody else had read in the course pack. (Gabrielle's interview, March 2004).

(Abasi, A.R., Akbari, N. & Graves, B. (2006). Discourse appropriation, construction of identities, and the complex issue of plagiarism: ESL students writing in graduate school. *Journal of Second Language Writing, 15*, 102–117.)

Many teachers, for instance, felt that reading published EAP research was not a priority, as they were interested in and committed to engagement with research in their original disciplinary area (i.e., TESOL). Other reasons that limited their reading of EAP research were the lack of time, issues of access, and perceived lack of relevance of research to the teachers' own contexts. This was evident in the following comments from Phase One of the study:

Recently, research topics have become so narrowly focused and specialized that I do not see how they can be used to inform practice (T36).

I have had a lot of problems applying the findings of EAP papers to my practice. They [i.e., academic researchers] are not familiar with the problems we face in the Iranian context. Instead, I generally rely on EAP textbooks to gain ideas for my teaching (T74).

(Bahrami, V., Hosseini, M. & Atai, M. R. (2019). Exploring research-informed practice in English for academic purposes: A narrative study. *English for Specific Purposes, 54*, 152-165.)

Drawing conclusions from interview extracts

Excerpt 7 (E7). The following comes from an interview with the hospital team's leader:

He says "Do what you want. Spend what you want." Then he came to the damn meeting and was worried about money! Giving me mixed signals! That's when I decided, I'm gonna spend what I want and make my own decisions ... .

By the time the division chief met with the team, the decision to hire the facilitator - the largest expense - had already been made. It was "too late" to be "worried about money," and the team never checked its budget with the chief.

(Gersick, C. J. G. (1988).Time and transition in work teams: Toward a new model of group development. *The Academy of Management Journal, 31,* 9-41)

Combining Quotations

Participants supporting each other

Looking for information to support an angle was often expressed as the task of looking for supporting facts and figures. CJ said:

My job is to look into it to see whether their [the editor's] ideas are right, or if they have got the right end of the stick, and to try and find enough facts and evidence to backup their idea.

Furthermore, QL, a features writer, said:

... you're then all the time sifting the facts to see whether they'll go into that scheme (the angle).

(Attfield, S. & Dowell, J. (2003). Information seeking and use by newspaper journalists. Journal of Documentation, 59(2), 87-204.)

A science correspondent described the importance of background research in preparation for an interview:

I certainly wouldn't like to have spoken to him without having researched the subject before, because I didn't know anything about it and I wouldn't have known the questions to ask (GQ).

Developing a better personal understanding also facilitated more focused information seeking with respect to online cuttings archives. A junior newsjournalist said:

It's a question of finding out key points . . . and then using Lexis[2] to investigate them further. You can home in on a particular issue (RK).

On background information facilitating an informed interpretation, MG said:

It just puts the whole thing in context and enables you to interpret the latest story in the light of what's gone before . . . But you don't always have that knowledge yourself, so you have to acquire it from somewhere else.

(Attfield, S. & Dowell, J. (2003). Information seeking and use by newspaper journalists. Journal of Documentation, 59(2), 87-204.)

Ignatius developed this schema further, probably drawing on the same biology lessons but also referring to what he had seen in the countryside around his home.

His written response was, “Hybrids are some kinds of plant that need insects for their fertilization and which are planted by birds,” and when we talked about it, he proffered this explanation:

Because I have seen some plants hanging on other like cactus. I once saw it in a position it was not supposed to be. I asked someone and he tell me maybe a bird plant the seed. . . . It was on a baobab tree.

Gregory, too, developed a rich interpretation from this schema, as he told me during his interview:

Hybrids are those trees that resulted from the seed being carried away or being planted. . . . I am differentiating it from those that are being cut before planting . . . though I don’t know the meaning of this hybrid. I just derive the meaning from the passage.

(Parry, K. (1996). Culture, literacy, and L2 reading. *TESOL Quarterly, 30*(4), 665-692)

Participants disagreeing with each other or changing over time

When asked about their satisfaction with their accommodation, Student A pointed out:

My accommodation is very nice, It is clean and warm and I have easy access to all the facilities I need..

Whereas, Student B disagreed:

I am not very happy with the accommodation. It is small, the facilities are at the end of the corridor and it is never cleaned.

Students also reported experiencing some confusion about what they were learning in the genre-based writing class, including precisely what to focus on to improve their writing skills, which showed their initial lack of independence as L2 writers.

I had no idea about how to write in this class. It was too challenging for me. (…) The language exam we take in school consists of multiple choice questions, which has its answer. However, writing doesn’t have just one right answer so that is why many students are confused and consider writing difficult. (Case 75, week 2)

However, even though they admitted having difficulties in writing, they were actively seeking for ways in which to improve their ability to write and their capacity for self-regulation.

It was helpful to learn about how to organize my writing based on the structure of the recount genre. It helps my thoughts be organized. (…) And I also felt like reading examples of this kind of writing because I that way I can learn various expressions through reading that will help me write better. (Case 13, week 3)

(Han, J. & Hiver, P. (2018). Genre-based L2 writing instruction and writing-specific psychological factors: The dynamics of change. *Journal of Second Language Writing, 40,* 44-59)

A dialogue

Shirley and the others were preparing for bed. "Don't forget to wash up," said Gretchen [one of the staff persons at the shelter] . Shirley exploded, "I'm 53 years old!" she shouted. "I have children older than you, and I don't need you to tell me to wash up before going to bed." Having gotten started, Shirley couldn't stop. She denounced Gretchen and the shelter staff for purposely demeaning the women as part of their effort to control them, and continued along these lines until - perhaps to force them to prove her point - she was expelled for the night.

(Liebow, E. (1993). *Tell them who I am: The lives of homeless women.* London: Penguin. - cited in Yin (2011, p. 236)

Putting it all together

Where did they get that meaning from? Four students claimed that they knew the word, so presumably they were drawing on memory. The problem in this case was that their memories were either inexact or downright wrong. An example of the former is Anthony's written answer, "Plants different species and parents," for which he did not get a point; however, when asked to explain further, he showed that he did know something of what he was talking about, for he said that hybrids were "the same plants, but they have different parent - their genus but different species." Benjamin and Ferdinand seem to have had a similar problem, producing, respectively, "Hybrid is plant or animal of different kinds" and "Hybrids are the offspring of plants or animals"; each seems to have remembered only part of the definition and to have been content to use that as a basis for interpretation. The fourth student in this group was Jacob, who got into even worse trouble, for he seems to have equated hybrid with parasite. His written answer to the question was "They are many in number which have been cultivated but only few are been fertilized and the stupid and useless ones are hybrids. Hybrids are plants or young plants." During his interview he asserted, "I know it [the word]. I found in agriculture textbook. They are plants that grow on the parents . . . that is . . . just the same thing as parasite," and, in defiance of the assertion in the passage that many hybrids "have been developed .... by horticulturalists," he told me, "You can't make a hybrid...because you can't plant it, Miss - the thing only develop itself."

(Parry, K. (1996). Culture, literacy, and L2 reading. *TESOL Quarterly, 30*(4), 665-692)

Uses

Most of the time, the extracts from the accounts that you quote will be used to provide evidence for your stance or claims.

However, you can also:

- use quotations as examples or illustrations
- compare and contrast quotations from your own data or from other researchers' data
- evaluate your own or other researchers' data
- use quotations to agree or disagree with other researchers
- use quotations as a starting point for further research
- use your quotations as explanations
- use quotations to enable respondents' voices to be heard
- use quotations to improve readability, and so on.

NB: But do NOT use quotations to make your points. Use your own words for that.

Language

Reporting - Paraphrasing and Summarising

Reporting interviews uses paraphrase and summary to acknowledge the participant's. You can extract and summarise important points, while at the same time making it clear from whom and where you have got the ideas you are discussing and what your point of view is. Compare, for example:

Participant 1 claims that a far more effective approach is ...

Participant 1 points out that a far more effective approach is ...

A far more effective approach is ... (Participant 1)

The first one is the participant's point of view with no indication about your point of view. The second one is the participant's point of view, which you agree with, and the third is your point of view, which is supported by Participant 1.

Here are some more expressions you can use to refer to someone's words that you are going to paraphrase, summarise or quote:

According to GC ...

It is the view of Customer 1 that ...

The opinion of the manger that ...

X has expressed a similar view.

X reports that ...

The director notes that ...

X states that ...

X observes that ...

X concludes that ...

X argues that ...

If the speaker generally agrees with your line of argument:.

Participant 1 indicates that ...

Participant 1 reveals that ...

Participant 1 shows that ...

Turning to Participant 1, one finds that ...

Reference to Participant 1 reveals that ...

In Interview 1, GC stated that ...

As GC points out, ...

As GC perceptively states, ...

As GC has indicated, ...

GC has drawn attention to the fact that ...

GC correctly argues that ...

GC rightly points out that ...

GC makes clear that ...

If the speaker disagrees with or does not support your line or argument:.

GC claims that ...

GC states erroneously that ...

The words of GC assert that ...

GC feels that ...

If you want to report that one interview participant **agrees** with or **adds to** what another participant says.

GC accepts that ...

Participant GC agrees with participant BF that ...

GC concurs with BF that ...

GC and BF are in agreement ...

GC is in agreement with BF ...

GC holds a similar view to BF ...

GC supports BF in that ...

Both GC and BF ....

Neither GC nor BF ...

GC, in addition, claimed that ...

Furthermore, GC ...

What is more, GC ...

Similarly, GC argued that...

Similar comments were made by GC, who said that ...

If you want to report that one participant **argues against** or **disagrees wit**h what another participant says.

The thoughts of GC contradict ...

GC criticises BF ...

GC's opinion differs from BF ...

However, BF does not support GC's argument that ...

The ideas of GC disagree with those of BF that ...

Turning to BF, one finds that ...

Some participants, however, pointed out that ...

In contrast participant GC noted that ...

On the other hand, GC concluded that ...

Quoting

Sometimes you may want to quote an interviewee's words exactly, not paraphrase them. If you decide to quote directly from am interviewee, you will need an expression to introduce it and quotation marks will need to be used:

As X said/says, "... ..."

As X stated/states, "... ..."

As X wrote/writes, "... ..."

As X commented/comments, "... ..."

As X observed/observes, "... ..."

As X pointed/points out, "... ..."

To quote from X, "... ..."

It was X who said that "... ..."

This example is given by X: "... ..."

According to X, "... ..."

X claims that, "... ..."

The opinion of X is that, "... ..."

In all cases, make sure the speaker is identified (with a pseudonym, of course).

Concluding

After quoting evidence you reach a conclusion:

The evidence seems to indicate that...

It must therefore be recognised that...

The indications are therefore that...

It is clear therefore that ...

Thus it could be concluded that...

The evidence seems to be strong that...

On this basis it may be inferred that...

Given this evidence, it can be seen that...

Further details

- **Evaluating other points of view**

You can use quotations to evaluate your others' points of view.

See:Writing Functions 12: Evaluating

- **Indicating a gap**

You can use quotations to justify the present or further work by indicating a gap.

See: Writing Functions 19: Indicating a Gap

- **Comparing & Contrasting**

When you are working with other people's ideas, you will compare and contrast the different ideas and your own, discussing advantages and disadvantages.

See: Writing Functions 13: Comparing

- **Synthesising**

You will need to summarise other people's ideas, combine them and come to conclusions.

See: Writing Reporting Synthesis

- **Generalising**

In most cases, the conclusions you come to and the points of view you hold will be qualified and generalisations will be made.

See: Writing Functions 14: Generalising

- **Expressing degree of certainty**

You may also have different degrees of certainty about your claims.

See: Writing Functions 15: Certainty

- **Providing support**

You can use quotations to provide evidence to support your points of view and conclusions.

See: Writing Functions 18: Supporting

- **Analysis**

One thing that you learn in higher education is how to analyse. It is an essential part of writing critically. You can analyse quotations.

See: Writing Functions 17: Analysis

- **Supporting an argument: Illustrating and exemplifying ideas**

You can use quotations as examples or illustrations to support your conclusions.

See: Writing Functions 8: Examples

- **Giving reasons and explanations**

And you will always give reasons and explanations for your claims and points of view. Quotations can be used.

See: Writing Functions 16: Reasons

- **Drawing conclusions**

At various stages during your writing, you will need to sum up your argument and come to a conclusion about your quotations.

See: Writing Functions 23: Concluding

Discussing limitations

Introduction

All studies have limitations.

However, it is important that you restrict your discussion to limitations related to the research problem under investigation.

What were the limitations of your study? Think again about the process of your study, and, seeing it from a distance, discuss whether you think you have done it in the best way possible. It is probable that during the time you spent on the study, you thought of better ways of doing it. It is important not to hide this.

The question you have to answer now is: what aspects of the research could have been done differently? Did you ask the right question? Did you use the best possible techniques to collect the data? Concentrate on what you think are the weakest points of your study, and address them. Don 't hide this: it contributes to your final interpretation of the results.

Possible Methodological Limitations

1. Choice of the sample
2. Size of the sample
3. Availability and reliability of data
4. Lack of previous research studies on the topic
5. Methods/Instruments/techniques used to collect the data
6. Self-reported data

Possible Limitations of the Researcher

1. Access to data

2. Time constraints
3. Longitudinal effects
4. Cultural and other issues

Research Limitations

1. Formulation of your research aims and objectives
2. Your choice of data collection method(s)
3. Implementation of the data collection method.
4. Your analysis of the data
5. Scope of discussions.

Information about the limitations of your study are best placed the beginning of the discussion section of your paper. In this way, your reader will know and understand the limitations before reading the rest of your analysis of the findings. Understanding the limitations can lead to an acknowledgement of the need for further study. However, make sure you look toward the future, but do not end with it. It is important to emphasise what you found in your study, not what you have not found.

Discussion of the limitations of your study should not be hidden in the body of the discussion section unless a limitation is specific to something covered in that part of the paper. If this is the case, though, the limitation should be repeated at the conclusion of the section.

Then, conclude the general discussion with a strong paragraph stating the main point or points again, in somewhat different words than used before.

Discussing the Limitations

- Make sure you describe each limitation in detail;
- Explain why each limitation exists;
- Provide reasons why each limitation could not be overcome;;
- Evaluate the importance of each limitation to the the overall findings and conclusions of your study; and,
- If possible, describe how these limitations could be overcome;
- Point to the need for further research.

Examples

The nature of our sample makes it difficult to generalize results to sales forces in other industries. The predominance of men in these sales positions, though quite representative of the automobile industry, might obscure any gender-related issues in feedback research (Schul et al,1990). Also, the causal directions of our model, though well-grounded theoretically, cannot be supported by cross-sectional data

alone. Experimental designs or longitudinal studies would be necessary to check the directions of influence.

Srivastava, R. & Rangarajan, D. (2008). Understanding the salespeople's "Feedback-Satisfaction" linkage. *Journal of Business & Industrial Marketing, 23*(3), 151–160

Limitations and future directions.

Many limitations exist in the current study beginning with the sample being drawn from a population of students at a single, large, public, Midwestern university. Thus, the results may not be generalizable to students at other institutions or with other demographics. Second, the information produced from this study is descriptive and correlational, and causation cannot be inferred. Finally, the accuracy of respondents is questionable in reporting information on large survey studies such as this. For example, respondents were asked to recount how many hours per week he or she typically spends using the Internet, and the degree to which students may be able to accurately report such information is unclear. Future work should actually record logging data so as to determine the veracity of the self-report (though this could involve privacy issues).

Kirschner, P. A. & Karpinski, A. C. (2010). Facebook and academic performance. *Computers in Human Behavior, 6,* 1237–1245.

The most obvious limitation in this research was that of a small sample size, a limitation that prevented a clear generalized statement about the role played by WTC in the L2 classroom. The number of participants was too small to adequately address the research questions or to possibly generalize beyond the context of this study. With a larger sample, including a greater number of culturally different participants, any real differences would almost certainly have emerged. Still, the small population did not negate recognition of the importance of WTC in L2 instruction.

This study was further limited by the duration of the research, which was relatively short; so that participants were observed over a relatively short period of time.

Finally, the research findings of this study were limited by the inherent limitations of the instruments, and the statistical treatment of data collected. 7. In particular, while it was beneficial to employ stimulated recall as an introspective method in the interviews, because of the delay in the use of stimulus, accuracy in the recall of the participants' task performance was harmed.

(Bitchener, 2010, p. 207).

The primary limitation to the generalization of these results is the nature of the course used – a large lecture oriented introductory level class where laptop use was not controlled. Obviously, these results are not applicable to every classroom experience. Faculty who tailor their classes to laptops may have an entirely different experience. In many classes and labs, computers are necessary and learning may depend on immediate and constant access to computers during class time.

Fried, C. B. (2006). In-class laptop use and its effects on student learning. *Computers & Education, 50,* 906–914.

One of the limitations of this study had to do with the small number of participants and the fact that only one department within the college of Education was surveyed. However, it was encouraging to find the results were similar to larger and more inclusive studies.

Bain, S., Fedynich, L. & Knight, M. Fried, C. B. (2009). The successful graduate student: a review of the factors for success. *Journal of Academic and Business Ethics, 3,* 1-9.

The main limitations of the current study were, first, that we did not measure the self-regulatory mechanisms, personality dimensions, or contextual factors that could underlie participants' emotional experiences and mediate or moderate the obtained associations between affective patterns and success
(e.g., goal regulation processes, Heckhausen et al., 2010; reappraisal vs. suppression strategies, Gross & John, 2003; traitconsistent affect, Tamir, Robinson, & Clore, 2002).

Barker, E. T., Howard, A. L., Galambos, N. L. & Wrosch, C. (2016). Tracking affect and academic success across university: Happy students benefit from bouts of negative mood. *Developmental Psychology, 52*, 2022–2030.

Language

The primary limitation to the generalization of these results is ...

Many limitations exist in the current study beginning with ...

One of the limitations of this study had to do with the ...

The main limitations of the current study were ...

The most obvious limitation in this research was the ...

There are two major limitations in this study that could be addressed in future research. First, the study focused on …. Second ….

As with the majority of studies, the design of the current study is subject to limitations.

This research though is subject to several limitations.

The study was further limited by the ...

The research findings of this study were limited by ...

The results of the present study are also limited due to the fact that ...

The nature of our sample makes it difficult to generalise results to ...

See also: Discussing; Evaluating; Giving Reasons

Drawing conclusions

After evidence or data has been produced and described or arguments made, it is necessary to come to a conclusion. This should follow logically from what it follows and should be clearly signalled. It is particularly important to have a good conclusion in the the conclusion section of your writing (See Writing a Conclusion), but you need to come to intermediate conclusions throughout your writing.

Analysis

Read the following example of the conclusion from the field of computer assisted language learning and teaching. The study investigated the use of the World-Wide-Web for teaching writing in a British university. After a

summary of the research, sentences 4 & 5 describe the final conclusion that has been reached.

Use Of A Writing Web-Site By Pre-Masters Students On An English for Academic Purposes Course.

A. J. Gillett, University of Hertfordshire

Conclusion

[1]During the past 10 years, the use of computers in education has increased dramatically and a wide range of educational computer programmes are now widely available for individual and classroom use. [2]However, there has been very little research reported on the effectiveness of such use. [3]The purpose of the present study was therefore to ascertain the effectiveness of using computer-assisted instruction as compared to traditional classroom instruction in an EAP writing class. [4]The findings clearly suggest that the inclusion of web-based materials in EAP writing courses for post-graduate students from East-Asia on an English language preparation course is effective. [5]Further research is needed, however, before the use of such materials can be recommended for all students in all subject areas at all levels.

Examples

Read the following conclusions:

In conclusion, therefore, it can be seen that millions of people continue to be affected by water-related problems and, contrary to popular belief, future water supplies are not inexhaustible. So the situation is very serious, especially in view of the UN estimates of demand. Although projects to provide ever-increasing supplies of water indicate that a growing number of countries are aware of the present problems and of those to come, these more often than not are highly expensive and not very practical - and very time-consuming when time is a commodity in short supply. So, while research in these areas is important, the eventual solution would definitely appear to be worldwide conservation and pollution control - in other words, a greater respect for our most valuable natural resource.

Altogether, it seems that we cannot accept without question the dramatic increase in recorded crime as corresponding to a real increase in victimization of the same proportions. But, however good it would be to explain away all, or even most, of the increase as an artefact of recording changes, this cannot be shown to be the case. We can plausibly infer that crime has been increasing in the last two to three decades, presenting a problem for explanation and policy.

Language

In short, In a word, In brief, To sum up, To conclude, To summarise In conclusion, On the whole, Altogether, In all,	....

It is	generally widely	accepted argued held believed	that ....

Therefore, Thus, On this basis, Given this,	it	can may	be	concluded deduced inferred	that... .

From	Table 1		it	can may	be	seen concluded shown estimated calculated inferred	that ....
	the	table figures data results information					

In conclusion, Finally	we/may say it can/may be said	that ....

Recommendations

Conclusions often need recommendations.

See: Recommendations

^

Recommendations

It is often necessary, especially in reports and case studies, to include some recommendations or suggestions for further work in - or after - the conclusion. You may need to be cautious in your recommendations.

Examples

For example:

> Further research is needed, however, before the use of such materials can be recommended for all students in all subject areas at all levels.

> However, these solutions can only be temporary and and the only long-term solution seems to be conservation and pollution control..

> Further testing should be conducted to determine the effects of chrome layer loss on cylinder barrel performance.

> RECOMMENDATIONS
> 1. Stocks of 20 No. 20361, and 20 No. U.1707 blades must be built up in the Tool Stores to meet present requirements.
> 2. Worn undamaged blades must be returned to the supplier in batches of 6 for replacement at £10.00 each.
> 3. New armatures from the supplier must be used when repairing Rip-Snorter motors.

> The practical implications of this study suggest that employers need to take steps to understand employees' perceptions of the content of the psychological contract and from this alter the terms of the contract where circumstances permit.
>
> [Coyle-Shapiro & Kesler, 2000].

> Given heterogeneous results, banning mobile phones could be a low-cost way for schools to reduce educational inequality.
>
> [Beland & Murphy, 2015]

> The results reported here have many implications for managers working with groups. Although traditional theory implies that group leaders have plenty of time at a project's beginning before the group will choose its norms and get to work, this model implies that a group's first meeting will set lasting precedents for how the

group will use the first half of its time. That finding suggests that group leaders prepare carefully for the first meeting, and it identifies a key point of intersection between group development and group-effectiveness research on team design.

[Gersick, 1988]

In terms of the findings of our study specifically, we recommend that mall retailers need to actively pursue the fashion conscious shopper as they will shop more often, but to recognize that while these fashion conscious like shopping and want variety, they are also price sensitive and will comparison shop to get fashion at the best price. Our results suggest that for mall retailers to be successful, they will have to recognize that fashion conscious consumers may no longer be price insensitive as suggested by earlier research, but that - fashion shoppers are demanding more from retailers in today's economy. Additionally, as shown in Table 1, shoppers visit the mall to meet a variety of needs that mall retailers will need to recognize and address.

[Iyer & Eastman, 2010]

It is recommended that HEIs and government explore how careers services can be enhanced and resourced to promote employability activities more effectively at faculty and departmental level.

[Lowden, Hall, Elliot & Lewin, 2011].

Language

Strong recommendation ↑ Weak recommendation	… must be done. … is needed. ... is necessary. There is a continuing need for … It is strongly recommended that … … should be done. … is strongly recommended. It is recommended that ... ... should be considered. It is advisable to … … could/might/may be considered.

^

Practical implications

It is often necessary, especially in practical reports and case studies, to include some implications for practice.

Examples

For example:

> The pedagogical implications for the use of the wiki based learning in a tertiary education environment are drawn from the findings and the literature. Therefore the following is necessary:
>
> - Designating marks for those students who start early and engage in editing the implausible comments;
> - Introducing 'mini wiki-tasks' (Elgort, Smith & Toland, 2008) that prepare students for group assessment;
> - Encouraging students to create a separate wiki page for asynchronous discussions in order to tackle delayed face to face meetings between the group members;
> - Giving formative assessment equal weight with summative assessment;
> - Encouraging late starters to participate in or initiate wiki activities;
> - Assisting ESL students in using Microsoft Word spell and grammar checkers; and
> - Giving students immediate feedback.
>
> Alyousef, H. S. & Picard, M. Y. (2011). Cooperative or collaborative literacy practices: Mapping metadiscourse in a business students' wiki group project. *Australasian Journal of Educational Technology, 27* (3), 463-480.

> In terms of the findings of our study specifically, we recommend that mall retailers need to actively pursue the fashion conscious
> shopper as they will shop more often, but to recognize that while these fashion conscious like shopping and want variety, they are also price sensitive and will comparison shop to get fashion at the best price. Our results suggest that for mall retailers to be successful, they will have to recognize that fashion conscious consumers may no longer be price insensitive as suggested by earlier research, but that fashion shoppers are demanding more from retailers in today's economy.

Additionally, as shown in Table 1, shoppers visit the mall to meet a variety of needs that mall retailers will need to recognize and address.

Iyer, J. & Eastman, J. K. (20100. The fashion conscious mall shopper: An exploratory study. *The Marketing Management Journal, 20*(2), 42-53.

These results also have important implications for research in behavioural economics. The fact that some of our tasks revealed non-monotonic relationships between effort and performance of the exact type predicted by the "Yerkes–Dodson law" cautions against generalizing results obtained with one level of incentives to levels of financial incentives that are radically different (see, for example, Parco, Rapoport and Stein, 2002).

Ariely, D., Gneezy, U., Loewenstein, G. & Mazar, N. (2009.) Large stakes and big mistakes. *Review of Economic Studies, 76*, 451–469.

The implications of this study can be useful in determining the quality of the graduate program, strategies which can be developed to create and maintain a community of connectedness for students, the role of professors in the overall success of their students, and initiatives to halt attrition and sustain graduate student success. The findings indicate student attrition can best be addressed by augmenting programmatical relevance and faculty mentoring, advising, encouraging, coaching, and modeling. Hence, the factors which can and do affect graduate student success have their genesis within the institution and faculty.

Bain, S., Fedynich, L. & Knight, M. Fried, C. B. (2009). The successful graduate student: a review of the factors for success. *Journal of Academic and Business Ethics, 3,* 1-9.

Reducing the demands of the evaluation process should enhance attention. Similarly, providing students with information about how their feedback will be used, and providing examples of improvements based on previous evaluations should theoretically increase motivation. Given the importance placed on student evaluations of courses and instructors, and the threats posed by careless responding, it is imperative that instructors maximise the effort students put into the process and that instructors identify instances of insufficient effort responding..

Bassett, J., Cleveland, A., Acorn, D., Nix, M. & Snyder, T. (2015). Are they paying attention? Students' lack of motivation and attention potentially threaten the utility of course evaluations. *Assessment & Evaluation in Higher Education, 42*, 431-442.

The practical implications of the study suggest that employers need to take steps to understand employees' perceptions of the content of the psychological contract and from this alter the terms of the contract where circumstances permit. In light of the importance of training fulfilment in affecting attitudes and behaviour, employers may need to rethink organizational practices such as training and development to facilitate employees' engaging in citizenship behaviour Clearly, employer obligations vary in terms of the ease and cost by which they can be altered. Consequently, employers may need to communicate to employees the reasons underlying their non-fulfilment of some obligations in conjunction to altering their delivery of others. Whether this organization in its present efforts to explicitly outline a 'new contact' and alter specific policies and practices to reflect this succeeds in generating a more positive psychological contact and consequences awaits future work.

Coyle-Shapiro, J. A-M. (2000). Consequences of the psychological contract for the employment relationship: A large scale survey. *Journal of Management Studies, 37*, 903-930.

Implications for Educators

There is a need for interested educators to become involved in sponsoring activities such as a virtual science fair. At the time of this writing, there were fewer than a handful in existence. First, teachers must be trained in the use of educational technology and they must have hardware and software available for the students to use during class and during students' free time. Educators who wish to sponsor a virtual science fair (or any competition) where students can publish their work, must advertise their competitions using the United States Mail Service as well as email. They must solicit and work cooperatively with schools and each other to pool their resources and share their expertise. This all begins by searching the Internet for educators who are doing similar projects and collaborating with them.

Language

The practical implications of the study suggest that ...

The implications of this study can be useful in ...

These results also have important implications for research in ...

The pedagogical implications for the use of ...

If these findings are valid, they have important implications for ..., ..., ..., and ... . First, ...

In light of the findings, the following implications are offered: ...

The study of visual-verbal relations in language learning materials presented in this article has three pedagogical implications. First, …

Our study delivers a clear message to educators that ….

In terms of the findings of our study specifically, we recommend that ...

^

Reflective

Reflecting

In academic writing, it is often necessary to reflect on your writing or study.

Reflective Writing

Carrying out the correct study process is essential, but in order to benefit more from this, you are often asked to reflect on this process.

You are often asked to provide a record of what you did plus a reflection of how you did it and how you are using what you are taught in your classes and any practical experience you are gaining to do this.

Reflective writing gives you the chance think about what you are doing more deeply and to learn from your experience. You have the opportunity to discover how what you are taught in class helps you with your real-world or academic tasks. Writing your thoughts down makes it easier for you to think about them and make connections between what you are thinking, what you are being taught and what you are doing. Your written reflection will also serve as a source of reference and evidence in the future.

The purpose of reflective writing is to help you learn from a particular practical experience. It will help you to make connections between what you are taught in theory and what you need to do in practice. You reflect so

that you can learn. Reflective writing is particularly useful to help you improve your practice, to help you use what you learn in a practical way

In reflective writing, you are trying to write down some of the thinking that you have been through while carrying out a particular practical activity, such as writing an essay, teaching a class or selling a product. Through reflection, you should be able to make sense of what you did and why and perhaps help yourself to do it better next time.

"It is not sufficient simply to have an experience in order to learn. Without reflecting upon this experience it may quickly be forgotten, or its learning potential lost. It is from the feelings and thoughts emerging from this reflection that generalisations or concepts can be generated. And it is generalisations that allow new situations to be tackled effectively." (Gibbs, 1988, p. 9)

You might reflect for many reasons in many ways, for example, in a diary or personal log.

You might want to or be asked to reflect on:

- how to choose a subject for your dissertation,
- how to approach your dissertation,
- what your essay title means,
- how you are going to approach the essay,
- how well you wrote a piece of work,
- how you prepared for a lecture,
- how you listened to a lecture,
- how you undertook a reading assignment,
- how you performed in a recent examination,
- how you contributed to some group work,
- how others reacted,
- how you did in a practical situation,
- what experiences you gained in some part-time or voluntary work you did,
- how you solved a particular problem,
- how you can improve your study,
- ....

In your reflection, you could write about:

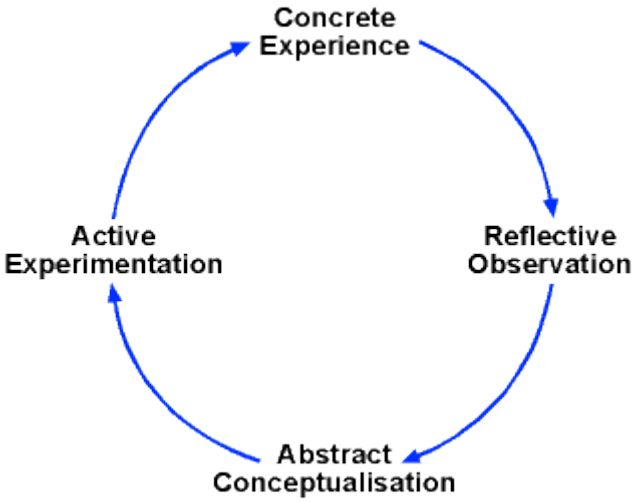
- what you did and why you did it,
- what was good and bad about it,
- why you found it good or bad,
- what you found easy or difficult,

- why you found it easy or difficult,
- what you liked about what you did,
- why you felt like that,
- how you might want to follow it up,
- what other people did and why they did it,
- how did you feel about what others did,
- how you used what you have been taught in class,
- what other information do you need,
- what you are going to do differently in this type of situation next time,
- what steps you are going to take on the basis of what you have learned,
- what you are going to do next.
- ....

Reflective writing often involves an action plan in which you should write about:

- what you are going to do differently in this type of situation next time
- what steps you are going to take on the basis of what you have learned .

Kolb's (1984) experiential learning cycle is useful here:



In this case **Concrete Experience** is the activity - what you did. **Reflective Observation** is thinking about how you did it, how you felt and how you might have done it differently. **Abstract Conceptualisation** is thinking about what you were taught in class, what you have read about how to do this stage and why. **Active Experimentation** is thinking about what you learned from your reflection and conceptualisation and planning how you might do it differently next time.

If you need to, for example, reflect on something that you have done in class.

- Concrete experience
  - You will probably start by describing what you did.
  - You might then want to write about how you did the activity, what methods you used.
- Reflective observation
  - You might then want to evaluate your performance. What happened and why? How well did you do?
- Abstract conceptualisation
  - In order to do this, you need to consider what you have been taught. You might want to describe what the experts say.
  - You may then to consider your reactions. How did you/do you feel?
  - You then need to consider in what other ways you could have done the activity.
- Active experimentation.
  - You might finish by considering how you would do it next time.

Based on Kolb's work, Gibbs (1988, p. 47) suggests the following stages to encourage deeper reflection:

Description:	What happened? What are you going to reflect on? Don't make judgements yet or try to draw conclusions.
Feelings:	What were your reactions and feelings?
Evaluation:	What was good or bad about the experience? Make value judgements.
Analysis:	What sense can you make of the situation? Bring in ideas from outside the experience to help you. What was really going on?
Conclusions (general):	What can be concluded, in a general sense, from these experiences and the analyses you have undertaken?
Conclusions (specific):	What can be concluded about your own specific, unique, personal situation or ways of working?
Personal action plans:	What are you going to do differently in this type of situation next time? What steps are you going to take on the basis of what you have learnt?

Language

Reflective writing should include both descriptions, analysis and thoughts about what you have experienced.

Unlike other academic writing, reflective writing is usually written in the first person and should definitely include your thoughts and opinions e.g. *"I read the handout before the lecture. This is often recommended. I was therefore well-prepared for the lecture and understood it well. I will continue to read the handouts before the lecture"*.

Some useful language is:

Description

Report what you did.

Time
Yesterday, ...
In the morning, ...
Before the class, ...
After the meeting, ...

Sequence
First, ...
First of all, ...
To begin with, ...
Next, ...
Then, ...

After that, ...
Finally

Action

The first thing I did was ...
I'd already ...
I went ...
I needed to ...
I had to ...

* For more information, see: Writing descriptions; Narrating and reporting; Describing processes; Giving reasons

Feelings

Describe how you felt.

I felt (very) pleased with ...
I was (really) delighted ...
I was quite satisfied.

It wasn't very nice.
I didn't (really) like ...
I wasn't (very) happy with ...

I didn't like ...

I (really) hated ...
I was (very) annoyed ...
I was (really) angry ...
I was (extremely) irritated/exasperated/displeased/unhappy/angry.

+ ▲ ▼ -

On the one hand, ...
On the other hand, ...

* For more information, see: Expressing feelings

Evaluation

Describe what was good and bad about it.

I was (very) pleased with ...
It was fantastic/marvelous/excellent.
It was very good
I was quite satisfied.

+ ▲

It was OK.

I wasn't (really) satisfied.
I wasn't (very) happy with ...

It wasn't very good.

I was (really) disappointed ...
It was (very) disappointing.
It was very bad.

-

The trouble was, ...
The problem was, ...
The real problem was ...
The point was ...

On the one hand, ...
On the other hand, ...

Give reasons.

I honestly feel ...
I'm convinced that ...
The main reason was that ...
This was owing to the fact that ...
This was caused by ...
This was because of ...

The reason was probably that ...
That was probably due to ...
I'd say ...
The problem, I think, was the fact that ...

This might have been because ...
It could have been ...
Perhaps it's ...
It's difficult to say, but I'd guess ...

+

-

Because of that, ...
For that reason, ...
As a consequence, ...
As a result, ...

One effect of this was ...
One result of this was ...
One consequence of this was .

On the other hand, ...
Alternatively, it might have been due to ..
The other reason was that ...

Besides that, ... And on top of that, ... What's more ... And another thing ... Plus that fact that, ...

* For more information, see: Evaluating; Expressing reasons and explanations; Expressing degrees of certainty; Generalising

Analysis

Describe what you know from your reading and teaching about what other people have done.
Explain why they did it and what conclusions they came to.

Some people Many people X	say(s) argue(s) believe(s) claim(s) point(s) out is/are of the opinion seem(s) to believe	that	…
I've read			
According to X,			

They He She X This	is/are may be seem(s) to be would seem to be	mistaken. wrong.

I disagree with X when he	writes says	that …

* For more information, see: Reporting, Arguing and discussing; Analysis

Compare what you did and the conclusions you came to with what they did.

But in fact, ... But actually, ... That's a good idea, but, ... That may be so, but ...

That's probably true but, ... I'm not so sure about that, ... I think that's debatable.

* For more information, see: Comparing & contrasting

Conclusions

Evaluate your knowledge & practice on the basis of this.

In thinking back... On reflection, ... I should have ... It would have been better to ... I could have ...

Discuss what knowledge and skills you lack.

I can't ... I don't ... My --- isn't good enough. I need to ....

Conclude.

It is	generally widely	accepted argued held believed	that ....

Therefore, Thus, On this basis, Given this,	we I	can may	be	conclude deduce	that... .

In conclusion, Finally	we/may say it can/may be said	that ....

* For more information, see: Writing conclusions

Action Plans

Explain what you are going to do next and justify it.

I'm going to ... I feel it is necessary for me to ...	+ ▲

I've decided to ...
I now intend to ...
It's my intention to ...
I fully intend to ...
I'm going to make sure I ...
I plan to ...

I should now ...
I ought to ...

I'm planning to ...
I'll make the effort to ...
I'll see if I can ...
I'll do what I can to ...
I'm thinking of ...
I might ...

I'd prefer ...
I'd rather ...
It would be better to ...

I'll probably won't ...

I'm not keen on ...
I'd rather not ...

The main reason is that ...
This is because of ...

Because of that, ...
For that reason, ...
As a consequence, ...
As a result, ...

One effect of this will be ...
One result of this might be...

* For more information, see: Action plans

Example/Exercise

Read this example. Can you recognise the sections and language identified above.

Last week, I had to give an oral presentation on my progress in an assessed piece of work that my colleagues and I have been working on. We have been developing a new advertising strategy for a well-known international company. We are a group of three from different countries all doing the same third-year course.

The presentation was 3.00 last Thursday. It was in a small formal lecture theatre and there was an audience of about 20, including my lecturer and the other members of my group. We had prepared the PowerPoint slides together, each person contributing one part of the whole presentation. I had to speak for 10 minutes. I started on time, but I felt very nervous to begin with. And immediately I pressed the wrong computer key and cancelled the show. That made me feel even worse. After that the next few slides went fine but when I came to the first slide prepared by one of my colleagues I started to make mistakes. I gave the wrong information, contradicting what was written. When someone asked a question, I was not able to answer and the person who had written the slide had to answer it. This happened twice more. My voice became less confident at that time and I slowly plodded through the rest of the slides. I finally finished a few minutes late. There were only one or two question, one of which I could not answer at all.

I was very worried before the presentation. I was afraid that I would not be able to say the right things and that I would not be able to represent our progress adequately. I had done one or two oral presentations before but had never been very satisfied with them.
I decided to use Power Point. I was not very secure about its use, though, because I have seen it go wrong so many times. I thought it would be a good idea to practise in advance but I couldn't get access to the room with the projector in so I wasn't able to. I was quite annoyed about that.
When it came to giving the presentation, I really wanted to do it well. But, as it turned out, the presentation was terrible. It just didn't go smoothly at all. It has left me feeling very unconfident in my ability. I even worry about it at home and it's affecting my other courses. The timing was terrible and everyone seemed bored. No one asked me any sensible questions, either. The PowerPoint presentation itself went wrong. I think I clicked on the wrong button. I was very nervous and my voice was very unsteady. Well, that was how I felt, anyway.

I've just been reading what I wrote last week after my terrible presentation. When I read what I wrote again, I do see things slightly differently. It probably wasn't that bad. The other members of my group actually said afterwards that I had looked quite calm, despite how I was feeling. Although, I am not sure whether they really meant it or were just trying to make me feel better. When I think back, though, if I had known that they thought I was doing all right - despite what I felt - I probably could have continued more positively. Maybe it would have been useful to practise in front of my collegaues before the real presentation. They could have then told me what they thought. I would have also got my timing right (Lowe, 2006). I had decided to use PowerPoint as I had not seen any of the other students giving a presentation without using it – so I thought it would probably be expected. And knowing how to use

PowerPoint would be a valuable addition to my transferable skills on my cv. The student in the previous week had been excellent and I hoped I could be just as good. The presentation had been interesting, informative and clear and I thought the handouts from them were good, giving just enough but not too much information. As it was, it went from bad to worse. I know it was bad at the end because the other members of my group started to answer the questions that people were asking me.

I have talked to several of the audience and they said it was OK. My points were clear and logical and they understood what I was trying to say. They also said that when the other members of my group started answering the questions, I should have tried to prevent this. That's probably right. Maybe I need to learn to be more assertive. But I should also made sure that I knew what I was talking about.
I have also talked to my lecturer. And he said that, despite some problems, it was OK. I need to learn how to use PowerPoint better (Lowe, 2006). I also need to make sure that I know and understand what my colleagues have put on the PowerPoints before I get to the actual presentation! I have read a little bit more about evaluating advertisements (Lavidge & Steiner), which was what their slides were about. So I am now feeling more positive generally and I can begin to analyse what I could do better in future presentations.

In general, I think it's clear that, although oral presentations can be very threatening, with proper planning they can be handled. It's important to to know the subject well and understand how to work the technology. Timing is important and you can't guess; the only way to get it right is to practice.

I need to think again from the beginning about the process of giving a good presentation. I probably will use Power Point again but I need to make sure I can use it properly. I have looked at the help file and and a manual (Lowe, 2006) and I now know which buttons to press - "N" for next and "P" for previous - it's easy. I also need to remember that I am using PowerPoint as a tool. I should not let it control me. In order to do that I need to be confident in using it – I need to practise more.

I'll probably always be a little nervous in such a situation, but next time, I will make sure that I know the subject matter well, and that I know who the computer works, before I start. That means I need to study the PowerPoint manual more. I also need to make sure I am organised enough to have a practice session with the rest of the group.

As I am finishing writing this, I am discovering how useful it is to go back over things I have written about before and read them again. It helps to see the situation differently. The first time I wrote this, I felt that the presentation was dreadful and that I could not have done it differently. But now I realise that it wasn’t so bad, that some of the problems were not mine and there are easy solutions to some of the others.