SUMMARIES OF VIDEOS

GRADE 10 - 12

SOCIAL IMPLICATIONS

These short discussions deal with a few main topics relating to the social implications (including impact on society, health and ergonomics, and environmental issues) of computer use. They may be useful to obtain a view that you haven’t yet considered, or they could be used as an introduction to an idea, about which you could think/research further and debate in your family or class.

1. Some Reasons for Studying CAT

What sorts of benefits do you think CAT learners have in their future studies?
- Research
- Presentation of work or report
- Saving of time
- Collect, manipulate and analyse data to draw conclusions
- Network with and collaborate with others
- Tap into the global network
- Ability to communicate in various ways; to access online help
- Submit work electronically

How can CAT learners apply their CAT skills in their future careers?
- Most jobs are moving towards the ‘knowledge’ economy
- Productivity
- Ability to learn new skills and processes

2. The Work and Career Benefits of Using a Computer

In what ways do you think good computer skills can be used when trying to find work?
- Presentation of CVs – make a good impression
- Ability to research what careers are available
- Connect and network with others, to put your name out there
- Use sites like LinkedIn, Twitter and Facebook to create a professional image

How could one demonstrate computer and other skills before even getting a job?
- Apart from the interview, companies often ask candidates to demonstrate their skills
- Provide an online portfolio of work

What kinds of skills do you think employers are looking for?
- Flexibility and adaptability – constant updating of skills and knowledge
- Online professional development – workplaces are changing very rapidly and will continue to do so

What kinds of computer skills might be needed by about 2025 or 2030?
- Most jobs that will be around in 10 to 15 years time haven’t even been invented yet
- Data management, data analysis and meaningful information from which special knowledge can be draw for companies to make strategic decisions
- Programming of computers in fields like engineering, medicine and many other areas, to solve new problems
### 3. The Overall Impact of ICTs

**What would you not be able to do if you weren’t able to use computers?**
- Very little!
- Couldn’t do job, watch TV on computer, listen to music, communicate with family members in all parts of the world
- Would be very unproductive
- Can be tricky to get the balance right when computers impact on so many areas of life

**Do you think that access to a computer makes life easier and if so, how?**
- Allow one to do things that otherwise wouldn’t be possible
- Enhanced education options are useful
- When computers are on all the time, this could easily interrupt normal life too much
- Human relationships and face-to-face time are also very important, in social, family and work situations
- Make considered decisions about when to use electron applications

**Do you think that family life is hindered or helped by the presence of computing devices and other electronic devices?**
- Technology is a tool – decide if you want to use it to help or hinder your life
- Decide how to deal with gadgets during key moments like meal times
- Make sure that technology is serving your interests

### 4. The Impact of Computers in Homes, Offices and Education

**What sort of computing devices can be found in homes and do they make home life easier?**
- Phones and tablets
- Smart TVs
- Game consoles – play stations, Wii, etc
- Media centres like
- Appliances with computers inside (washing machines, for examples)
- Can be helpful in terms of efficiency, convenience, time-saving, etc.
- Apply balance and use these intelligently

**Do you think we can go as far as saying that teenage obesity can be attributed to the amount of physical inactivity they experience because of their almost constant ‘on-screen’ time?**
- Yes, to an extent
- Also the responsibility of parents and teens themselves (all of us)
- Over-eating is also an important reason
- Need to do physical activity, preferably with other people – it helps us to keep that exercise appointment
- Create a structure that allows for appropriate use and balance

**In what ways have computing devices changed the office?**
- Profound changes! Not only in the way we work but also in the type of work we do
- Computers have allowed for large volumes of repetitive work to be completed
- People are not needed as much to do this repetitive work anymore, so humans have been pushed ‘up the value chain’ – people design and programme the computing devices, so that the computers themselves can do the work that people did before
- Allow us to work with a team of people in real time (at the same time)

**Will human beings still have a role to play in the workplace?**
- For many people the reality is that some jobs are being taken over by computers
- A lack of skills and education will contribute to this inability to use computers
- Routine and mundane jobs are under threat
- However, technology is also creating other, new jobs – so education for new skills is vital
- Programming and online marketing are examples of new roles in the workplace

Has the option of working from home changed?
- Increasingly, working from home is a reality – this is often referred to as telecommuting
- More and more jobs can be done from anywhere in the world, with a computer and an internet connection
- This doesn’t guarantee employer trust and good management
- Productivity needs to be judged differently
- There are environmental advantages to working from home – less travelling and using of fossil fuels

Talk to us about 3 best options for technology in education
- Much of this depends on the learning environment and the age of the learners
- Best options – view rich media (online games, audio, video, website); administration of education (keeping track of who is learning, when, how, drawing reports of progress, communication results and statistics (efficient, more cost effective); ability to collaborate and learn from others in other parts of the world – this is especially good for teachers to learn from each other; also important for learners to work with people from different backgrounds and geographical areas. This allows for a wide variety of exposure to different cultures and values.

5. The Economic Reasons for Using Computers
In what ways does computer use make economic sense?
- As a form of digital technology, computers increase the ability to do productive work (like all technologies) – increase productivity
- Reduce costs – increase efficiency
- Increase in innovation and creativity
- Economically, when swapping goods and services for money, computers therefore create goods and services more quickly, more efficiently, less expensively
- Examples of goods and services include finding (providing) information, advertising, goods sold online
- For example, in the accounting sector: economic value includes efficiencies (faster delivery), developing new ways of delivering services
- For example, in a surgeon’s life: allows for ‘remote’ surgery using a robot, allows for good sterile conditions, more accurate and minute movements, fewer mistakes. Surgery is therefore more efficient – surgeons can get through more surgeries in less time, bring the cost down and reduce recovery time (through keyhole surgery).
- For example, in agriculture: tractors can be GPS guided, allowing for harvesting of fields without the tractor being controlled by a human driver; this allows the farmer to do something else

Is it possible to make money using computers?
- Definitely! Some people have made large amounts of money – think of Google and Facebook.
- Many other things can be done – build apps, create music and video, analyse information and data, help others with information by connecting with them.
- The computer becomes the tool to allow you to do any number of entrepreneurial things.
6. **Consider the Environment**

Why do we need to dispose of computers and computer peripherals wisely?
- Toxic metals in computers, which will leak into the ground when decomposed
- Take these sorts of things so that parts can be disassembled, to dispose of everything properly
- Cost-wise, money can be recovered through recycling of many computer parts

Where can one do this kind of computer recycling?
- There are companies that collect and recycle computers, although they usually do this for large companies
- Recycling companies often sell old computers to other smaller companies or pass them on to organisations that might need them, like schools
- Pick n Pay and other supermarkets sometimes offers bins for these kinds of components
- We need to be more pro-active and ask companies, like computer sellers, to make this service available
- Sometimes returning an old computer can bring in

Do computers is a lot of energy, and if they do, what sort of energy management should we apply?
- Yes, they do use a surprising amount of energy
- Many new computers will come with software that will inform you of how much energy is being used, often in terms of energy used by light bulbs
- Mobile phones and similar computing devices use less energy
- Decide what kind of performance you need – this affects how much power is used. If you are carrying out complex tasks, like with video editing or very large spreadsheets doing powerful calculations, set your processor to be on maximum, but if doing a simple Word document or surfing the web, power settings can be turned down. This won’t really be noticed.
- The screen takes a lot of power – if in a brightly lit room, bring down the brightness of the screen. This is also better to reduce eye strain.

Some research shows that just to build a single computer requires about 1,8 tons of different chemical and fossil fuels and water. It’s also said that every year about 35 million tons of CO\(_2\) is poured into the atmosphere from the collective number of computers on earth. One study also said that collectively computer users cause about around 300 million tons of CO\(_2\) to enter the atmosphere just from surfing the Internet. Do you know of any ways that we can reduce CO\(_2\) emissions?
- Reduce or limit the energy requirements of our computing activities
- Look at how we are generating the electricity we use – this requires global efforts to change the ways we use fossil fuels, switching to other forms of electrical generation, possibly ‘carbon sequestration’ to store fossil fuels produced
- Offset the CO\(_2\) we produce, by doing things like planting trees and conserving the trees we have already
- Limit CO\(_2\) producing behaviour in other areas – cars produce far more CO\(_2\) emissions than computers, for example

7. **Looking after a Computer**

Tell us about the physical care of computers and other computing devices
- Computers are not as strong as they might appear.
- Handle with care – keep them away from water and don’t spill any liquids on them
- Keep devices in a protective cover
- Screens need extra care – use a screen cover
- Don’t throw them or drop them... treat all computing devices with great care
What are some special things to consider about the hard drive?
- The hard drive is a series of discs with a reader; the disk is spinning so movement while the hard drive is moving when damage it and possibly also damage the data stored on it
- If moving your laptop, first put it into sleep mode

Why are passwords important and what is a good password?
- Use passwords to protect what’s “behind the front door”
- Need to use a good, strong password
- ‘password’ and ‘1234’ are not good as passwords
- Use a combination of characters, like letters, numbers, exclamation marks or similar
- Make passwords long – say 10 to 15 characters
- Don’t follow language conventions i.e. not something logical like a word or 2 words joined
- However, the longer the password, the more difficult it is to remember – get the balance between getting a strong password and being able to remember it
- There are lots of new software applications where passwords can be stored – various passwords go into one place behind one password, so you only have to remember one password
- Biometrics can also be used – like a fingerprint or a scan of the iris in the eye

8. Treating Data with Care
Data quality is important. How can this be achieved?
- The better the quality of the data, the better the analysis that can be done of the data
- The principle is “Garbage in, garbage out”
- Be sure data is clean – it is not corrupted, all records are accurate and complete, well-described (can someone else also understand it?), well-organised.
- Must be useable with others and by others

How does data encryption work?
- It works with a key – a string of numbers and letters, often quite long
- A random key is generated by a piece of software; then every byte of data is changed in some way by putting it through a mathematical formula that incorporates the random key
- The end result is data that makes no sense
- To make sense of it, the encryption needs to be reversed, and the only way to do this is if you know the key
- Encryption can be applied to a file on your hard drive, to e-commerce transactions,
- Use encryption to keep your own data safe and to keep data safe when sending it to someone else
- Look out for websites that start with https:// - this shows a secure website

So what is backup and how do you do that?
- This is simply a copy of data that is stored somewhere safe, either as a hard copy or in the cloud – a safe or vault, a local server, a cloud application like Skydrive, Google Drive and Apple iDrive. Flickr, Picasa, YouTube and even Facebook store media and other files in these services’ servers.
- Cloud backup is usually very secure and is often free; a new device could be used to access backed up data, with an internet connection
- Theoretically cloud services can be damaged, but stat in the cloud is mostly stored in many locations and the services have built in ways of being strong
- Hard copies can be made on DVDs or in external hard drives, but store these separately from your laptop or computer and preferably in another building
- The purpose of backup is to have a safe copy in case something goes wrong with the hardware you are using – theft, hard drive crash, fire, etc.
- Do a backup as often as needed, based on the nature of the data – work backup might occur daily or weekly, personal photos could be backed up monthly, legal and tax documents for a family might be backed up every year

### 9. Protecting your Computer

**How can we protect ourselves from theft of computing devices?**

- Think of your computer items like piles of cash – keep it close to you, don’t flash it around, keep it out of sight

**What steps can we take to protect ourselves against theft or loss of data?**

- Backup is essential
- Data can be stolen through phishing, using key loggers (monitoring key strokes), etc.
- Use good antivirus software – to check that there are no programs or types of activities that shouldn’t be there
- Be aware of what websites you are visiting and what you click on
- Disconnect from the internet – not practical for a lot of work we need to do, but the less exposure you have to the internet, the less chance data theft and infection can occur

**What should we look for to avoid suspicious activity?**

- Big flashing banners offering to clean your computer, send you money, reward you for being the millionth visitor... they are not true and don’t click on them
- Look for https:// if using a banking website; it it’s not there, leave immediately – creating a website that looks like the real thing is called spoofing
- Be careful of e-mails – don’t believe offers of money or rewards because you have been selected in a lucky draw or someone traced your long-lost relative, who left you money. In the URL or address, there is no similarity with the institution the sender is pretending to be from. This happens a lot with banking-related hoaxes.
- Generally, don’t open e-mails from people you don’t know or from organisations you’ve never heard of
- Websites that have banner adverts with half naked ladies, know that the website is probably shady
- Don’t be naive, be responsible and have the right software to protect yourself. When antivirus software shows that there is a problem, take it seriously and take the recommended action. Keep the antivirus software updated.

### 10. Considerations for Different Applications

**How can we take end users’ needs into account when using databases?**

- Clean data, fields well indexed and correctly linked so that queries and reports can be run
- Format data fields well – enter whether data needs to be a date, or text, or a number

**How can we take end users’ needs into account when using spreadsheets?**

- Very similar considerations to those for databases
- Be a bit more aware of formatting – well-labelled columns, good formulae wherever possible, add comments to guide users

**How can we take end users’ needs into account when using word processing?**

- Presentation is important
- Make sure that font types match the purpose of the document, e.g. a business document
- Insert images with good titles
- Use good tables of contents
- Lay the document out well and see that it flows well
- Write clear, simple English
- Watch grammar and spelling (whether UK or US English is needed) and use the review tools to see to this
- Also use tools to set styles, automatic numbering

What sort of things should we consider when making a website, to make it user friendly
- Many of the things applicable to documents apply to websites too
- Watch out that the colour scheme is easy to look at for quite a while
- Don’t use blinking
- Structure the website well – look at the information architecture (how do bits of information relate to each other?) and navigation structure (is it easy to find important information?)

How can we take end users’ needs into account when preparing presentations?
- Remember the saying “death by PowerPoint”
- Don’t read from a slide!
- The presentation should only highlight what you want to say
- Keep the number of words on a slide to a minimum
- Use images that say what you want to say without adding words
- Use colours that are easy to look at; certain colours don’t go well together and some people can’t read certain colour combination
- Practice the presentation so that you are confident with it
- Check websites to see what colours go well with others (for presentations and websites)

11. Health Issues when Using Computers
We use small print on screens and those screens are emitting light; what can we do to minimise eye strain?

- Enlarge the font (available in word processors and other Office documents, as well as browsers)
- Remember to blink
- Use the 20-20-20 rule – every 20 minutes, look about 20 metres away for about 20 seconds; this gives the eyes a chance to exercise a bit, reduce strain
- Position your screen so that your looking slightly down
- Be aware of screen brightness – try to get it as bright as a white piece of paper is in the same amount of light
- Use the biggest monitor you can, if using a desktop computer, of the highest possible quality and with the most optimum screen resolution (neither too high nor too low, as this causes minute flickering). Monitor settings tell you what is the optimum setting.

Could you talk to us about repetitive strain injuries?
- One of the commonest ones is called carpal tunnel syndrome – an inflammation of ligaments in the wrist from moving the mouse a lot. This can be prevented and/or reduced. Loosen up with wrist by exercising it, support the wrist on a special mouse pad or on the desk

What can do to avoid posture problems?
- Look slightly down at the screen
- Sit as tall as possible, and avoid hunching
- Place feet squarely and firmly on the floor, with the chair not too high or too low
- Don’t sit for hours in the same position – get up and move around, about once every 40
12. Computer User Rights

Is Internet access a human right or not?
- Increasingly it is – as much of a right as health care, education, water and sanitation, electricity
- Some countries, particularly Scandinavian countries, have written into their constitutions that Internet access is a right of every citizen
- South Africa is not anywhere near this
- The trend is towards Internet access is towards Internet access for all
- This will enable contribution to the economy; people without access will likely fall further and further behind
- There is digital divide – it’s not only about a divide between those with computer and those without, but also a divide between those with access to the Internet and those without it
- Those without access to the Internet are at a huge disadvantage, which means that it does become a human right. Everybody needs to have access to the same tools and same opportunities.

How do we get Internet access to impoverished areas and very remote, rural areas?
- South Africa is getting closer to being able to provide Internet access to everyone – the issues relating to this access are almost identical to the issues related to providing access to water, housing, electricity and so on
- Technologically South Africa is in a stronger position to do this – using mobile phones and mobile Internet access

Do you think that Internet users should be able to view anything and everything, just what they want?
- South Africa is a democratic country so we have rights to do what we want, but that right must be seen against the rights of others.
- One’s right to view something if and when another person’s rights would be negatively impacted
- Access to information has been challenged lately – for example, using Bitcoin, a virtual currency. Bitcoin use can be tracked, but software is also available to hide this trading activity. Some people feel that this lack of transparency should not be allowed.
- The important question is, do we want to live in a country where everyone’s choices are restricted? This needs an ongoing discussion.

Do computer users have privacy rights and what can be done when privacy rights are misused?
- One’s life on the Internet should have the same safeguards to privacy as in everyday life.
- However, an online profile makes it very easy to give away private information, and we often don’t know what kind of private information we are giving away
- Check whether companies have the right to track our online behaviour – is the data they keep (like a browsing pattern) anonymous or does it include my name?
- Think of spending with a credit card – it’s alright to have this spending tracked, as long as this information cannot be made available to others
- Nobody has the right to check my computer usage or data, unless there is some real evidence that something has been done to arouse suspicion

Can we please talk about plagiarism, piracy and copyright?
- Plagiarism is pretending that someone else’s work is your own – it’s a form of stealing of ideas and effort
- Piracy is also a kind of stealing – download things that you should be paying for. This is a real issue in the music industry.
- Copyright infringement is a kind of theft too – any use of work, be it research, written articles, music or similar...
- Copyright normally says “all rights reserved” unless something else is specified. This also applies to use of this kind of information on a blog, for example. The Internet is challenging this, because we can add links to others’ work – as long as it is attributed (name and details of the original author or photographer) – this is a bit like free advertising.
- Creative Commons licences allow for more flexible use. For example, some work can be used in any way, as long as you attribute me, or as long you don’t make any money off it, or as long as you also share it like I have.

### 13. Communicating with E-mail

**What e-mail applications are useful?**
- E-mail is an integral part of our lives.
- Most e-mail applications offer the same functionality and benefits, whether they are cloud-based services like Gmail, Yahoo or Hotmail, or whether they are localised services like MS Exchange or company-based services.
- All offer Inboxes that can be categorised, all offer some sort of virus protection.
- The advantages of cloud-based e-mail services include less e-mail management, lower costs if not free, available anywhere in the world, and need for server hard drive space. Many of them are also available offline.

**What is spam?**
- It is any e-mail you get that you don’t want, from someone you don’t know.
- E-mail applications can manage spam quite well now, particularly with rules.
- When unwanted e-mail comes in, flag it as spam to manage it in the future.

**What are the no-no’s when sending e-mails in the workplace?**
- Using large attachments – rather send a link to cloud documents instead. Attachments take up space in the mailbox, and they make for inefficient work, compared to online editing, collaborating and all knowing where we all are on the same document.
- Think very carefully whether it is necessary to cc people in mails.
- It is not necessary to respond if you have been cc’d in an e-mail; us the To: line if two or more people need to reply with different information.
- Always use a subject line – a short, accurate one. Make it easier for colleagues to decide what to read urgently, help them to search for mails by subject at a later stage.
- Be brief and to the point in the body of the e-mail.
- Put the main point upfront, then elaborate on it below. This is known as an inverted pyramid style.
- Use basic, plain, business language.
- Leave out smiley faces and curly fonts; use the signature and branding in the workplace.

### 14 Aspects Relating to Social Media

**What do you advise us to do to protect our privacy and our dignity?**
- Think long-term! What will this look like in years to come? Remember that you often lose control of pictures or posts once it’s online, because people can post them elsewhere.
- Sometimes social media incidents cause interviewees to lose job opportunities or employees to lose their jobs.
- Even setting viewing controls doesn’t guarantee privacy – those who have access, like followers or friends, can pass things on.
Do you think that users of social media know enough about setting access controls and ensuring control of their privacy needs?
- Probably not  
- Some privacy control settings are quite complex  
- Go and find out as much as you can about privacy settings of various social media  
- Google+ offers good control

What are some of the positive aspects of being socially connected?
- We can connect online more widely than ever; not only socially but also by networking with peers and colleagues  
- Geographical boundaries so not apply  
- Collaboration provides excellent opportunities for learning new things or working with people who are elsewhere  
- LinkedIn can be used like an online CV, only more than this. It also reflects connections and experience, while also showcasing endorsements from other people. This can be a useful personal selling tool in the job space.  
- Use certain social media for different things, some personal and some professional

The negative aspects of using social media?
- Apart from privacy issues...  
- Social media can also be a big time waster  
- Can take the place of real relationships  
- Keep the balance, be safe, be careful, while having fun

Note: there are no interactive multimedia lessons and no How To’s for the series on Social Implications.