PROGRESS OUTCOME 3

Our changing digital society

Annotation

In working collaboratively to present their research, Miyeon and Kade demonstrate that they can:

- design, develop, store and evaluate digital content that meets its purpose
- use selected software to develop and combine digital content
- gather, analyse and present data in a meaningful way
- understand the relationship between operating systems and digital devices and the influence and impact they have on humans and society.

Background

The students have learned how to use Google™ applications to develop, combine, manipulate and present content. They know how to create Google Forms to gather data. They have been learning about the features of operating systems for specific devices, as well as watching videos and taking part in class discussions about the changes in digital devices and operating systems over time. The class has brainstormed and discussed changes in user interfaces when interacting with digital devices, including changes in both the hardware and user interface of their operating systems.

In mathematics, the students are conducting statistical investigations, learning how to pose investigative questions, collect data, and select the most appropriate data display for their results.

Task

The students are given a brief to guide their investigation into “Our changing digital society”. They are to work in pairs or small groups and can present their findings in a format of their choice. The final outcome will be presented in their social studies class and used as evidence of understanding for an inquiry into the impact of new technology and ideas on culture and heritage.

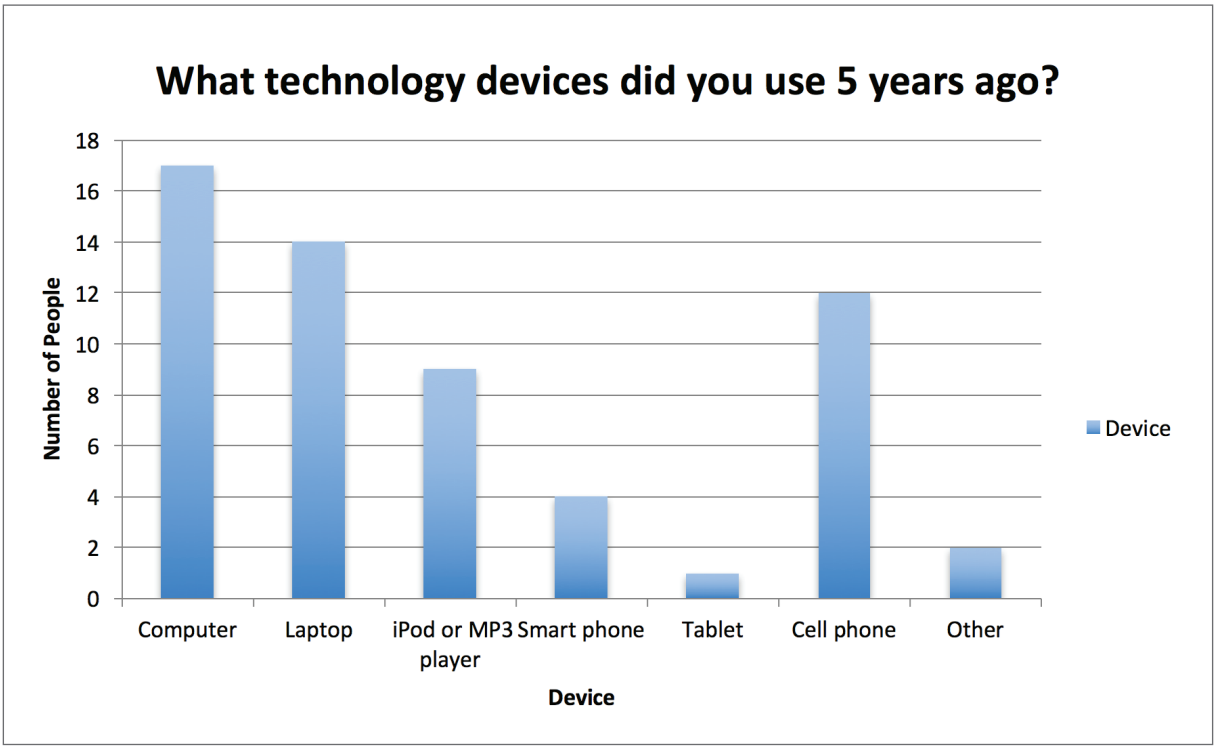
Our Changing Digital Society - Operating Systems and Digital Devices

This is a team project. You will work collaboratively with your partner(s) to:

1. Research changes in operating systems and digital devices over time and the impacts on our society.
2. Plan and design a survey, identifying what questions you will ask. Think about the design of the question type and how it will help you to analyse your data (e.g. multi-choice, tick box, scale). You should have a range of questions that help you to determine your respondents':
    a. use of various devices (e.g. laptop, desktop, tablet, mobile) and the OS they run on
    b. preferred methods of interaction with the devices (e.g. touch, swipe, keyboard, mouse, voice)
    c. use of security features that are available on the OS/device
    d. changes to the interaction with and use of devices over time
3. Create the survey in Google Forms. The survey should be given to a range of people across different age groups (e.g. grandparents, parents, teachers, aunts, uncles, brothers, sisters, cousins, friends).
4. In Google Sheets, analyse your results from the survey (using the various formulae we have learned in class such as average, countif, sumif).
5. On another worksheet tab from your own survey data, analyse the changes in operating system use over time from the w3schools website. Note: Use January data only for the past 10 years of statistics.
6. Create a slideshow, poster, report or movie based on our class discussions, your own research and your survey results. Include the following content:
    a. Your own experiences:
        i. How have operating systems and devices changed since you started using computers?
        ii. What operating system & device do you prefer to use primarily and why?
    b. Survey results:
        i. Use tables and graphs to show the results of your survey and the w3schools data.
        ii. Summarise the findings.
    c. Conclusions:
        i. How have changes to operating systems and devices changed the way we work, communicate, study, relax and also entertain?
        ii. How do you think these will continue to change with the introduction of new technology, in both positive and negative ways?

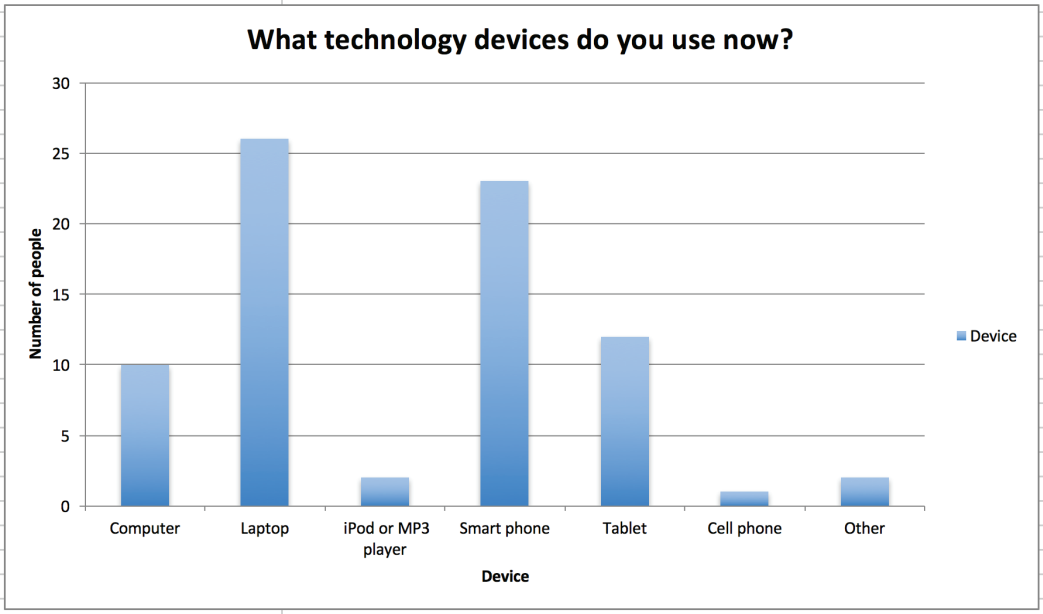
Student response

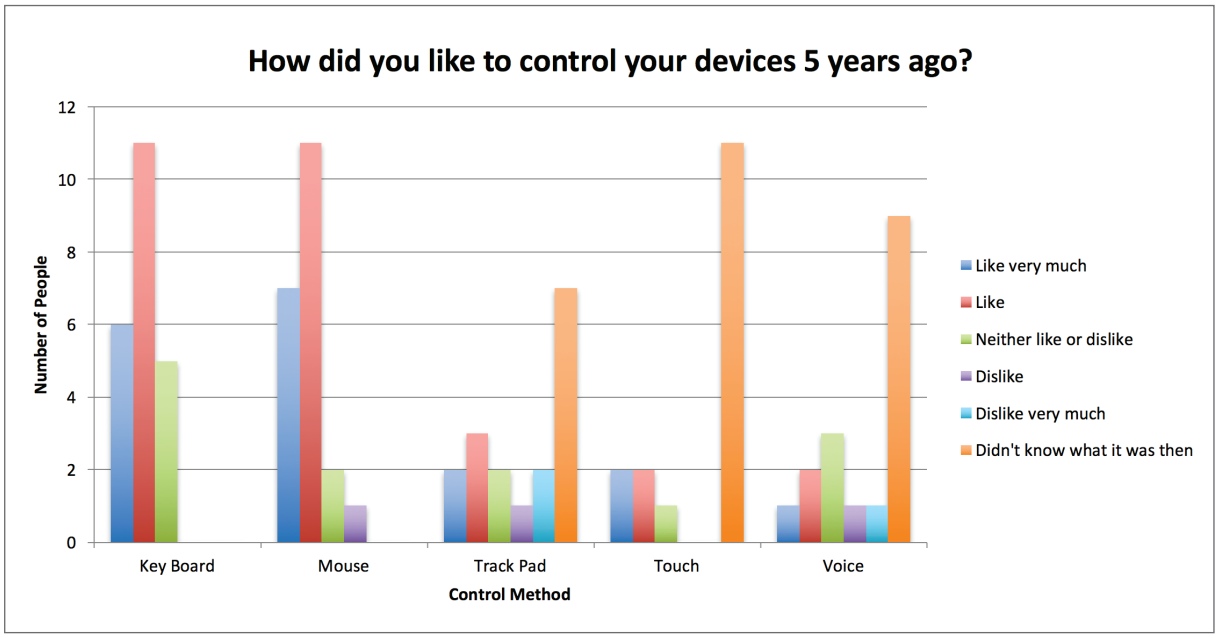
Miyeon and Kade design and develop an on-line survey, manipulate and analyse the data using a spreadsheet, and present their findings online. The following response shows excerpts from their presentation.



=COUNTIF(E3:E24,"*Tablet (e.g. ipad, Galaxy etc.)*")

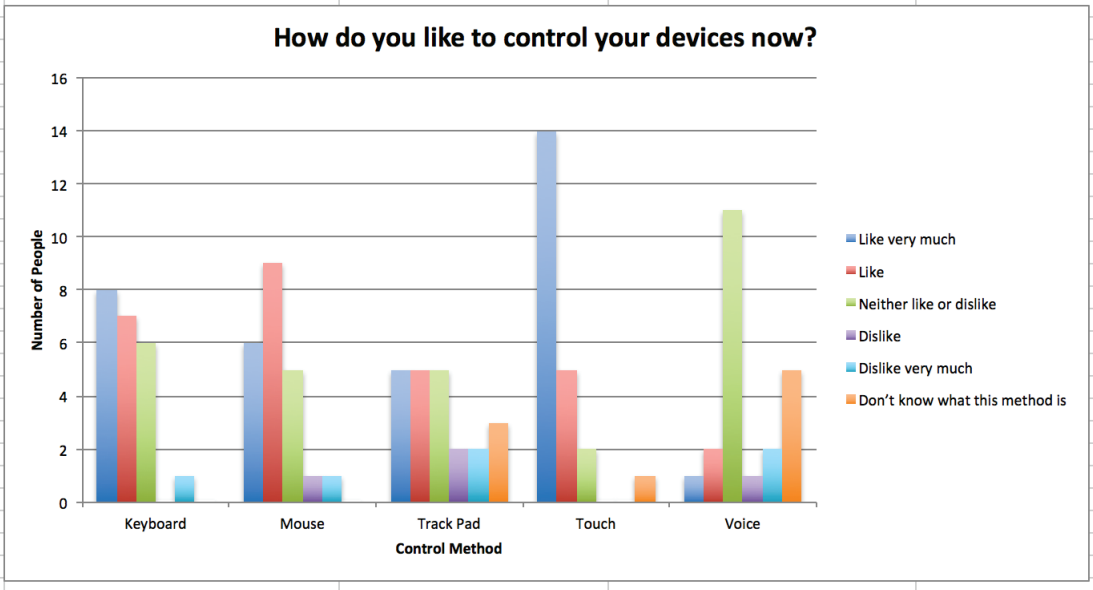
	Laptop
	Laptop, Cell phone
What technology devices do you use now?	**Device**
Computer	10
Laptop	26
iPod or MP3 player	2
Smart phone	23
Tablet	12
Cell phone	1
Other	2





=COUNTIF(S3:S24,"Like very much")

	Q	R	S	T
	Like very much	Neither like or dislike	Like very much	Neither like or dislike
	Like very much	Dislike	Like very much	Dislike
	Like	Don't know what this method is	Don't know what this method is	Don't know what this method is
	Neither like or dislike	Neither like or dislike	Neither like or dislike	Neither like or dislike
	Mouse	**Track Pad**	**Touch**	**Voice**
	6	5	14	1
	9	5	5	2
	5	5	2	11
	1	2	0	1
	1	2	0	2
0	0	3	1	



Mr Pearson: *I see you've performed a COUNTIF calculation in your spreadsheet. Can you tell me why you used this formula?*

Miyeon: *We wanted to calculate how many different devices people use, and the quickest way to do this is to use a COUNTIF. You can see how the formula calculates how many times a certain word (like "laptop") is used in the column and gives the answer. This is a reliable way of quickly counting the data entries.*

Kade: *We can also use this formula again for other calculations -- we just need to change the name of the device. It's better than manually counting everything, and if we want to add more data to the spreadsheet the calculation will update.*

Mr Pearson: *You've used graphs to present your survey data. Why have you done this?*

Miyeon: *We used graphs because they're easy to read, and they show the findings of the survey very clearly. We can also copy the graphs to other documents. For example, we can copy the graphs into our infographic about "Our changing society".*

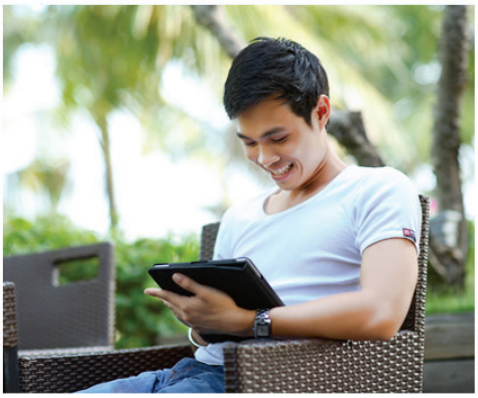
Mr Pearson: *So what does your survey data tell you?*

Kade: *The graphs tell us that some of the changes between five years ago and now are that computers have decreased in popularity, and laptops have gone up in popularity. The use of cellphones has decreased. People are using smartphones instead.*

Miyeon: *They also tell us that people like having more functions on their phones, and that the newer technologies (with more functionality) have had the greatest increase in usage. We can also see from the graphs that five years ago, people liked to control their devices using a keyboard and a mouse. Most people didn't know what a track pad, touch, or voice control were. Today most people know what these control methods are.*

Kade: *Yes, I'd say that even though the keyboard and mouse have remained popular, touch and swipe controls are very popular, and most devices use these. Voice control isn't as popular. I think that's because it isn't as easy to use, and it can be unreliable.*

Conclusion



Operating systems and digital devices have affected the way we work, study, communicate and spend our free time greatly over the past ten years. Having cameras and sound built in to devices for user interaction is making communication easier, more personal, face-to-face and faster through the internet. It is easier to communicate with people all around the world making the world seem smaller.

We believe that operating systems will continue to become faster and make it easier to work our devices. This will affect our lives by making them revolve more around our devices, meaning we spend less time face-to-face with our family and doing other activities such as sport and art. An example of this is with the teenage generation. They are spending more time on their devices watching movies, playing games, doing homework and talking to friends instead of playing outside and doing non-digital activities. We believe that this problem will become huge and through all generations with less people going outside and doing things.

We think devices will become smaller, touch and voice controlled and also controlled by other devices over the internet (Internet of Things). This means less human error as computers do more of the work. The negative side of this type of technology is that we would become more reliant on the devices and if they broke down we would not know what to do to help ourselves. We could get less exercise and less appreciation for natural things. Security is becoming become an even greater issue because everything is becoming linked together. Our operating systems and devices keep adding more and more security features, such as longer passcodes, finger print recognition and even face recognition.

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