

Our changing world: 21st Century Learning

Dr Judy Robertson
Computer Science
Heriot-Watt University

Before we begin...

- Start making a paper aeroplane
- As you listen, think about what you would like education to be like in 2039.
- Write it on your plane
- Don't fly it yet! 😊

Overview

- Where are we now? Recent changes in the learning environment
- Where are we going? What will the landscape look like 30 years out?
- What will our learners need?



Ha ha! Now I've got you!
I will send you home at once.

<space bar>

Changes to the learning environment

- A Curriculum for Excellence
- Steady changes to technology
 - Availability of Internet access
 - Availability of personal computing devices
 - Changes in resources online – Web 2.0

Young people's access to technology at home

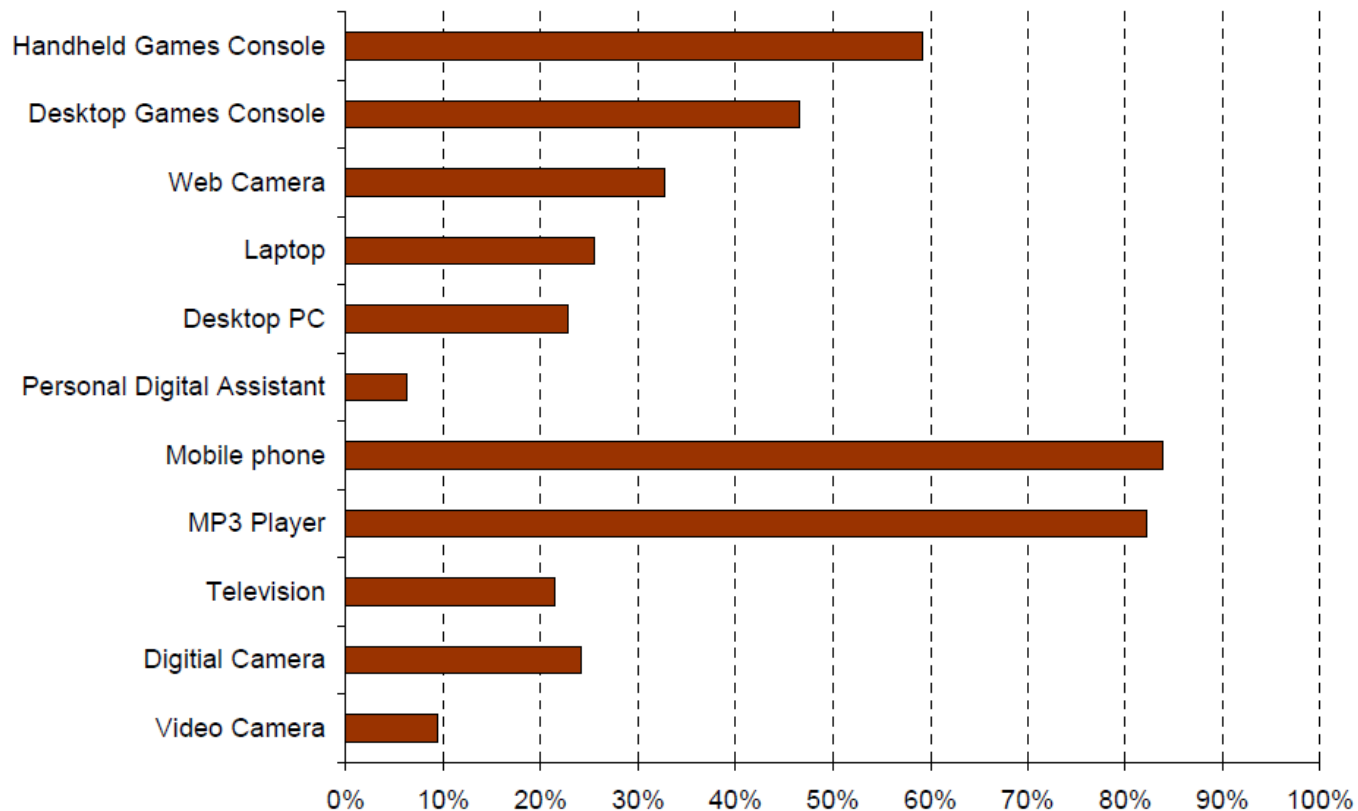
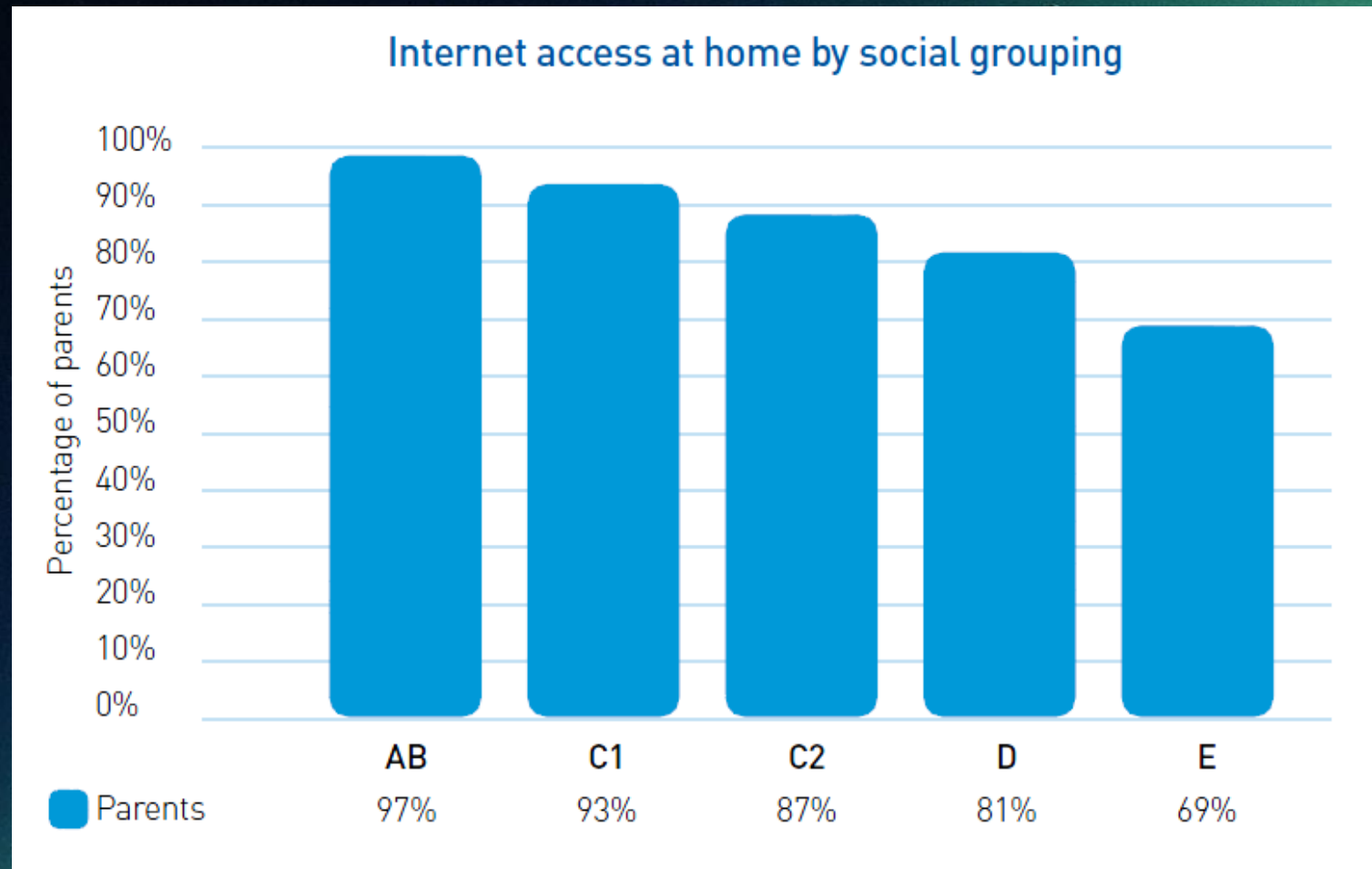
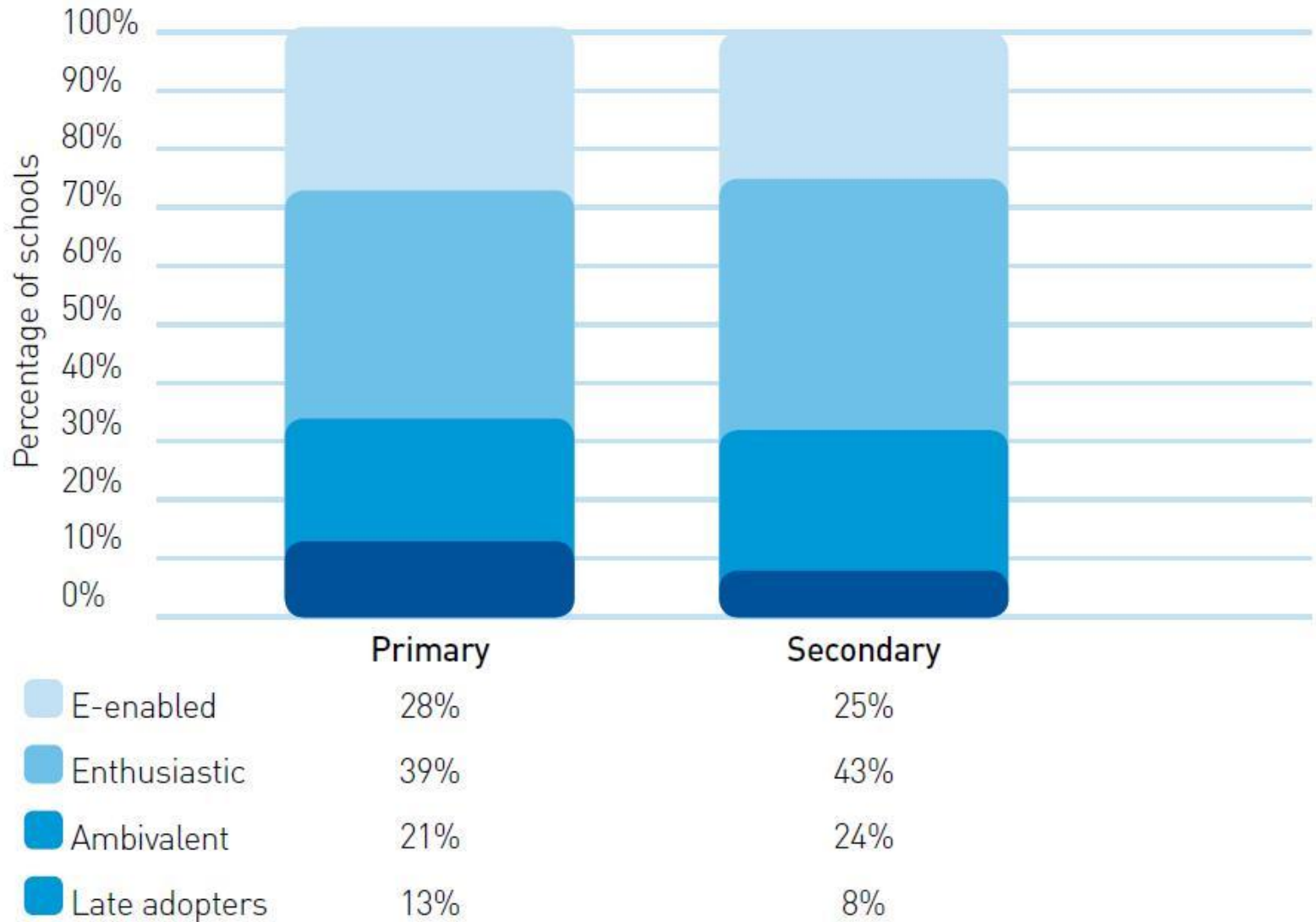


Figure 1: Percentage of 'national sample' learners with ownership of various technologies (N=1510)

Access to Internet at Home

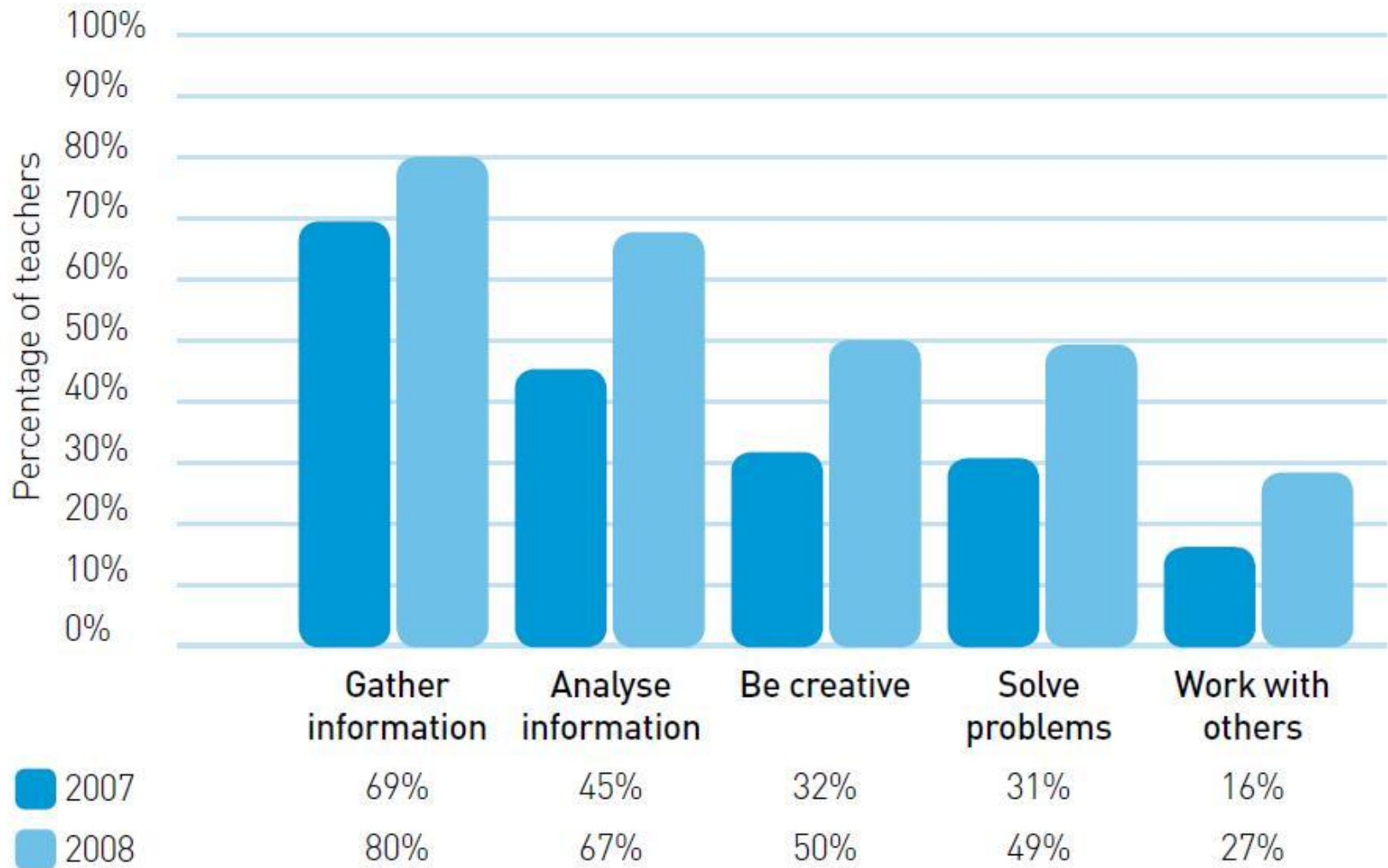


School e-enablement



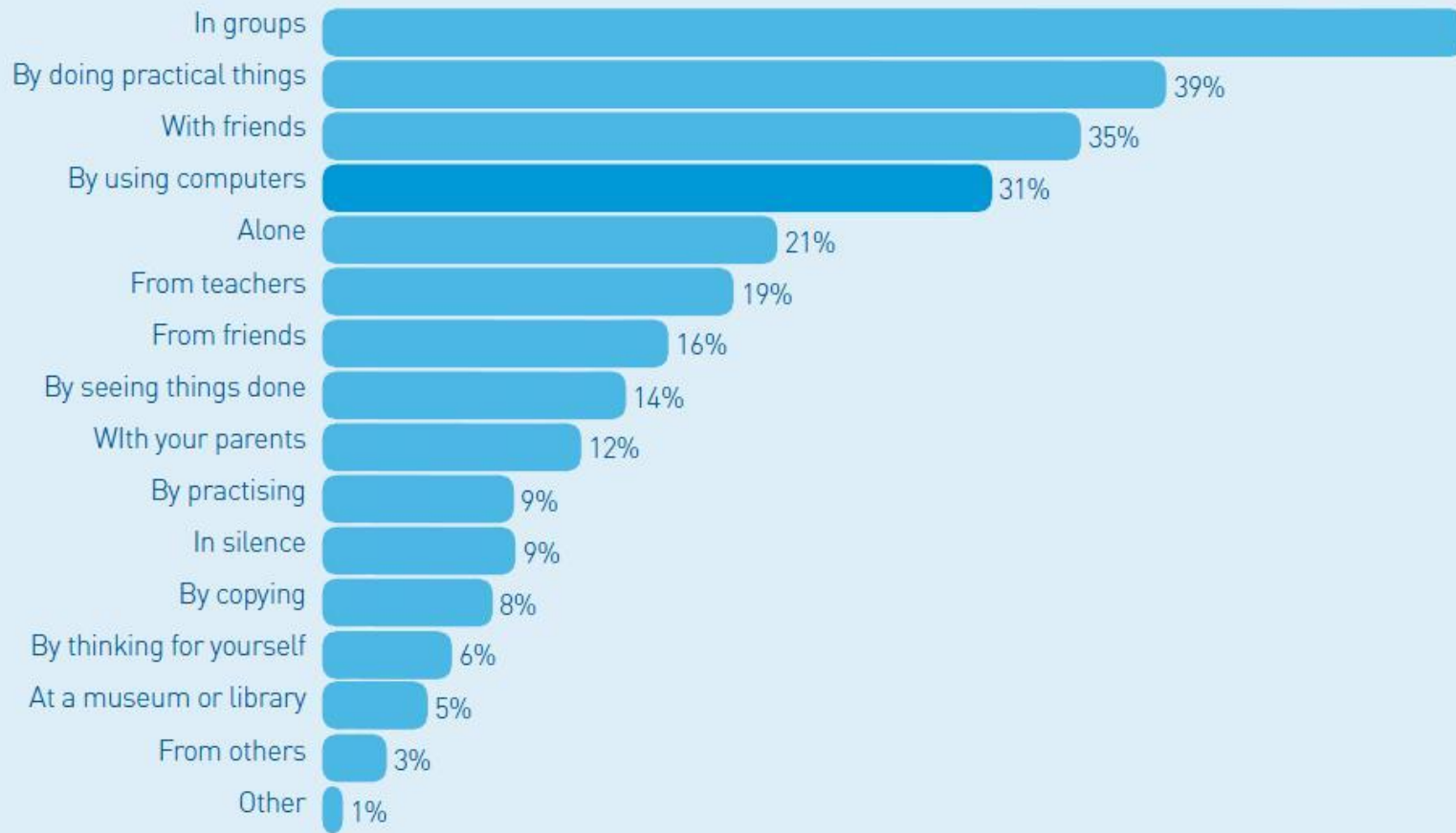
From BECTA Harnessing Technology Review 2008: The role of technology and its impact on education

Secondary teachers making some use of ICT with learners



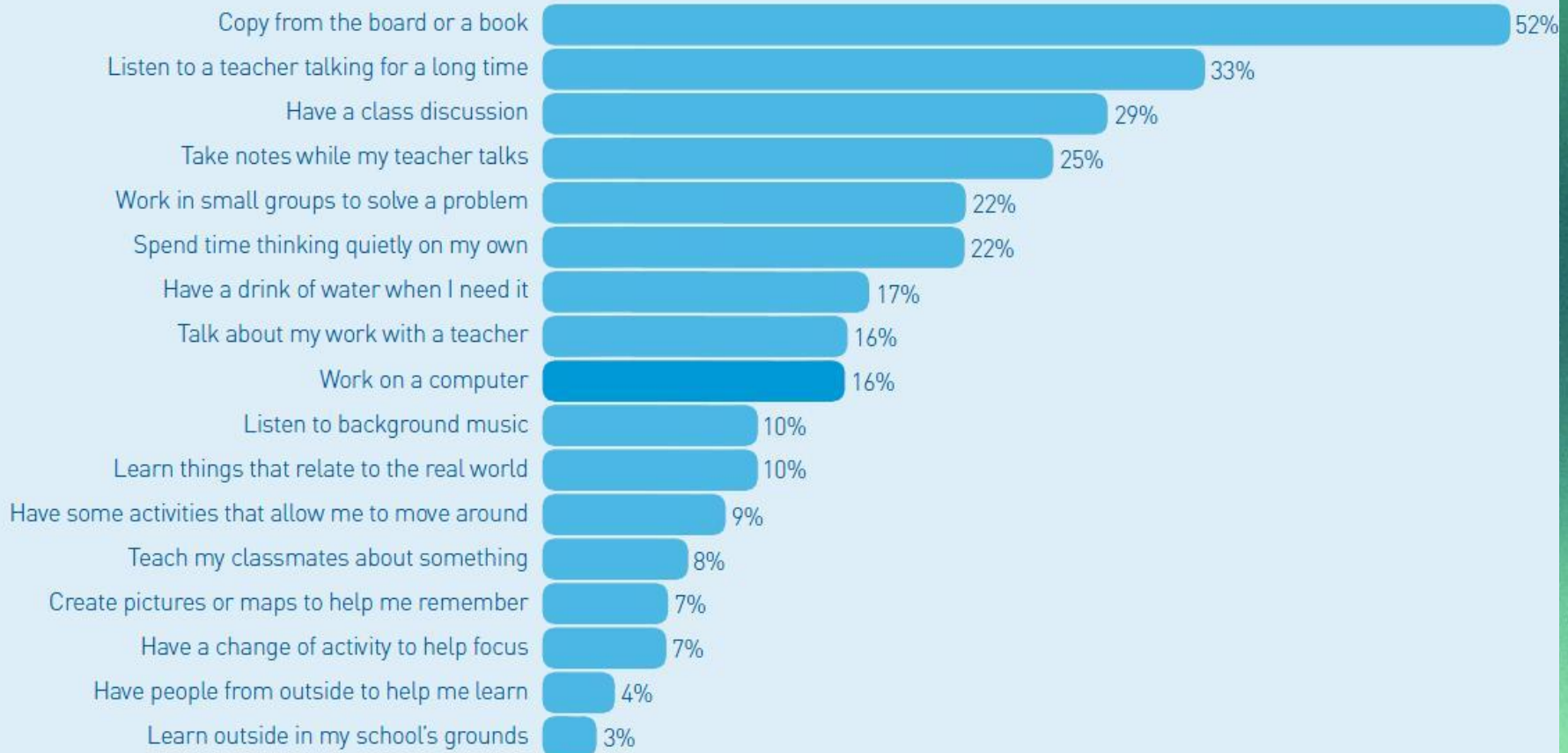
What learners want

In which three of the following ways do you prefer to learn?



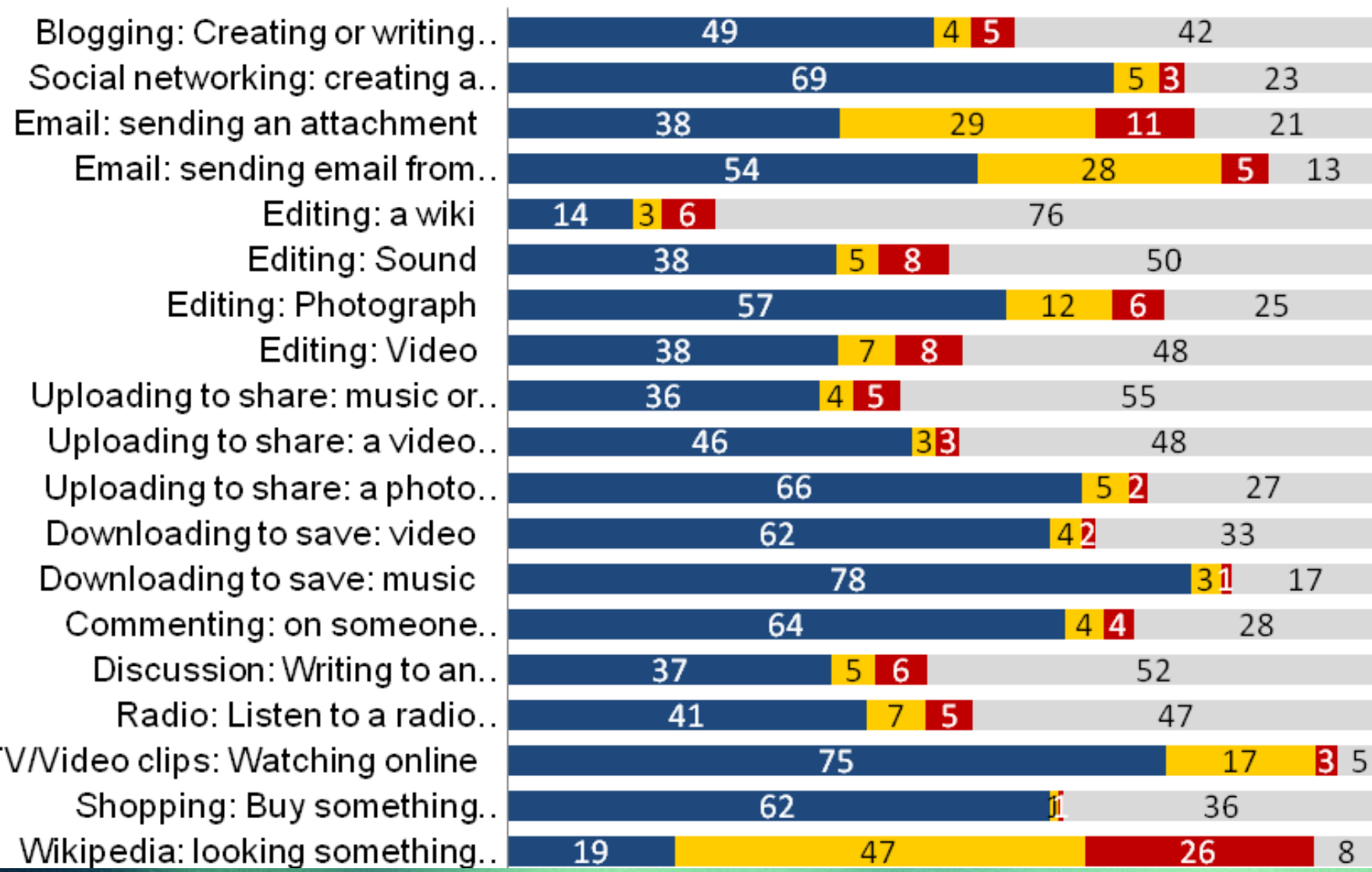
What learners get

Which three of the following do you do most often in class?



What is Web 2.0 anyway?

- It's an overused buzzword which refers to the change in the way the Web is used:
- From passive to active users
- Users generate/share their own content
 - Social networking sites (Facebook/ Bebo/ My Space)
 - Blogs
 - Wikis
 - Podcasts



BECTA Report on Web 2.0: Summary

- Extensive use of web 2.0 technology
- But mostly out of school, for social purposes
- 74% have access to social networking accounts
- **“relatively few learners are engaging in more sophisticated Web 2.0 activities, such as producing and publishing self-created content for wider consumption”**
- **“There is little evidence of groundbreaking activities and only a few embryonic signs of criticality, self-management and metacognitive reflection.”**

Implications

- In 2009, technology presents us with an ocean of possibilities for learning
- However, most kids don't use them to the best advantage for learning by themselves
- Educators have a role in helping learners get the most out of Web 2.0 and teaching them how to use it appropriately

Education in 30 years time?

- Luckily the Beyond Current Horizons project has thought this through fairly seriously
- They have a series of scenarios of what education might be like, given possible ways the world ends up
- It's based on many review papers by academic experts in sociology, education and computer science
- and consultation with the public

Socio-technical trends for the next 20 years

- **Information landscape will be denser, deeper and more diverse**
- Learners will have a personal information cloud
- **We will get used to living with machines – inside us too?**
- Distance will matter less (but geography has a role to play in access)

Socio-technical trends for the next 20 years

- **Digital natives will grow up and keep learning**
- Boundaries between home, work, school, entertainment venues will blur
- Utopia of “knowledge economy” doesn’t pan out
- **Silver bullets still won’t fix complex education problems!**

An assortment of questions to ponder

- Will there be such a thing as a classroom in 2039?
- Why should education only be for young people?
- What would happen if the state didn't provide education?
- Should cognitive enhancement drugs be allowed in school?
- What if teachers had easy access to brain imaging data from their pupils?
- What projects would you do if there was a 3D mechatronic printer in your class?

Some things which will remain the same

- Learning how to learn will still be incredibly important: meta-cognition
- Learner motivation will still play a part in success
- We will need to educate learners about their place in society and civic values

One million futures

- What people want from education in 2025
- <http://www.millionfutures.org.uk/>

What do *you* want for education in 2039?

- Write your own wish on your paper aeroplane and fly it towards me!

It's up to you!

**“The best way to predict the future is
to invent it.”**

Alan Kay

Questions?

- Judy.Robertson@hw.ac.uk
- www.judyrobertson.typepad.com
- www.adventureauthor.org (sign up free training in Game Authoring!)

To find out more...

- <http://www.visionmapper.org.uk/resource/resource.php>
- www.beyondcurrenthorizons.org.uk
- http://partners.becta.org.uk/upload-dir/downloads/page_documents/research/web2_technologies_ks3_4.pdf
- <http://publications.becta.org.uk/display.cfm?resID=37346>