

# Sixteen Ways to Hit Your Science Students...

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Enhancing the student  
experience and how to make it  
happen

JISC TechDis Service

20 June 2007



# Mission Statement

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TechDis aims to be the leading educational advisory service providing advice and guidance on technology and disability to promote an accessible and inclusive experience for all staff and students.

TechDis is a JISC-funded service (Joint Information Systems Committee)



# Sections...

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- What to hit your students with.
- How to hit your students.
- Who can help you hit your students most effectively every time?



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What to hit your students with.



# 1. Using what you know – Microsoft Word

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- Sans serif, size 12, left aligned, white space
- Web view and reflow
- Structures and headings
  - Unstructured
  - Structured
- AutoText and Auto Correct
- Hyperlinks and Screen Tips
- Avoid 'Click Here' or 'More Information'



## 2. Using what you know - Windows

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- Mouse and cursor settings
- Windows colours and fonts
- Accessibility Option
  - StickyKeys;
  - FilterKeys
- Voice Recognition



# 3. Appropriate use of Images

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- The appropriate use of captions and textual descriptions.
- Screen Tips



Less accessible



 **scran**

Microclimate effects are more marked in areas of diverse terrain.







Microclimate is influenced by different slopes providing different drainage characteristics and different aspects in relation to both radiative input and wind exposure.



## 4. Adobe PDFs

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PDFs have traditionally been seen as inaccessible formats. However, there are several usability aids within:

- Colour Change.
- Enlarging Text.
- AutoScroll.
- Read Aloud.
- Bookmarks.

[Sample PDF](#)



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How to hit your students.



## 5. Use of a Voting System

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What is the practice of protecting, preserving and managing the natural environment?

- a) agriculture
- b) forestry
- c) conversation
- d) conservation



# Who were the last 10 presidents of the USA?

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- A. Eisenhower, Kennedy, Johnson, Nixon, Ford, Carter, George Bush, Reagan, Clinton, George W Bush
- B. Eisenhower, Kennedy, Johnson, Nixon, Ford, Carter, Clinton, George Bush, Reagan, George W Bush
- C. Eisenhower, Kennedy, Johnson, Nixon, Ford, Carter, Reagan, George Bush, Clinton, George W Bush
- D. Eisenhower, Kennedy, Johnson, Nixon, Ford, Carter, Reagan, George W Bush, Clinton, George Bush



Non-responsive frattling is usually found  
in an:

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- A. gringle
- B. janket
- C. kleppie
- D. uckerpod



# Which are exceptions to the law of lompicality?

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- A. The miltrip and the nattercup
- B. The biffil panfrip
- C. The common quabbler
- D. The flanged ozzer.



# Which must be present for parbling to take place?

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- A. Phlot and Runge
- B. Runge
- C. Stuke and Runge
- D. Runge and Treke.





## 6. Use of Instant Presentations

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- Used by TechDis over 40 times.
- We live throughout the UK, as do our colleagues.
- Varied audience.
  - One location, one screen.
  - One location, numerous computers.
  - Numerous locations, numerous computers.
- Provide short, focussed presentations with screen sharing.



Presenter TechDis TechD



Presentation Control

End Session

Time 75 minutes left

Attendees

My Status: I'm fine

- Presenter TechDis TechD
- Alistair from Winchester
- Geoff Hains from Edinbu
- Kate Patel from Birming
- Sally Mason from Newcas

Users Connected: 5

Slides Screen Share Polls Video Conference



# A bit about you

Using the IT confidence voting system (we'll lead you through this) please self assess your skill level.

This is totally anonymous but will help us pitch the training to the needs represented in the audience.

Enable Audience Whiteboard Clear Whiteboard Save Controls Ready 2/2/12

Text Chat

Alistair from Winchester: Hello from Winchester...

Send to Everyone Send

Audio Chat

Audio Chat is enabled and available.

Microphone icon Mute Hold to Talk

# 7. Online Interactions

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## Discussion Boards (asynchronous) / Chat (synchronous)

Advantages:

working from home, deaf students and staff

Time zones; time to consider answers (disadvantage in chat); remove prejudices

Disadvantages:

slow typing - motor impairment, dyslexia, fatigue

difficult to do maths notation, diagrams are impossible? Lecturer losing personal time

+ hearing; ASD; speech - dyslexia; VIP



by Donna Harper - Wednesday, 1 February 2006, 11:06 AM

We have developed some subject signs that are quite visual which help all our learners but were designed to help those with dyslexia. Each A4 sign has an image representing the subject (as well as the text) and are placed on the top of the shelves. They were designed by an external graphics company for us and have proved to be a big hit with students.

We do still need to improve our signage in general and I like the ideas shown on the TechDis presentation - I think I'll be chatting to Keith Mellor later! 😊

Rep



### Re: Signage

by [Alistair McNaught](#) - Wednesday, 1 February 2006, 11:10 AM

This sounds really interesting - have you had mainly anecdotal feedback from learners or has there been a specific evaluation? I'd be interested in seeing a photo of your LRC with signs..

[Show parent](#) | [Reply](#)



### Re: Signage

by [Donna Harper](#) - Wednesday, 1 February 2006, 11:13 AM

It has been mainly anecdotal but I'm hoping our next survey will show some improvement in the results for signage in the LRC. I don't think we have a photo at the moment but I'll try and get something taken and send it to you.

[Show parent](#) | [Reply](#)



### Re: Signage

by [Maria Jayes](#) - Wednesday, 1 February 2006, 11:12 AM

I will be looking at signage (for starters!) when I get back to work. Today's sessions has really highlighted concerns that our department isn't doing enough to assist learners with difficulties - with the many suggestions and simple ideas that I have already got from today I hope we can make some changes to this very soon!

[Show parent](#) | [Reply](#)



### Re: Signage

by [felicity edkins](#) - Wednesday, 1 February 2006, 11:16 AM

I am interested in this and have had chats with some of our IT teachers to see whether we could have a bit of a competition for students to design the



# Instant Messaging - Gabbly

- Visit the link – [www.gabbly.com/www.techdis.ac.uk](http://www.gabbly.com/www.techdis.ac.uk)
- Gabbly will automatically open on over the web page
- Navigate the site and input your comments

1. Insert your user name

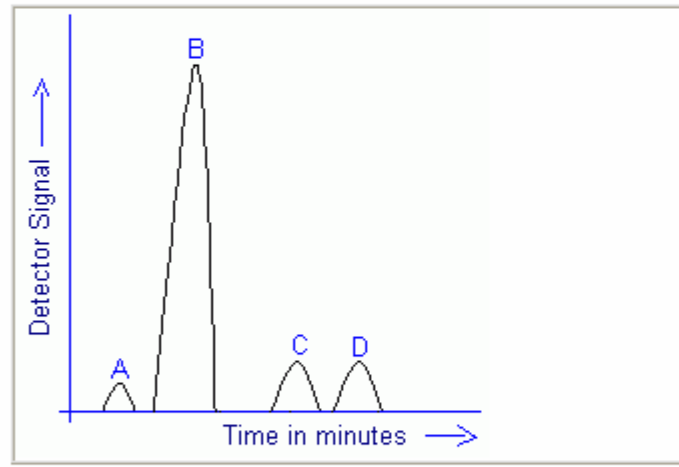


2. Insert your comments in the Chat pane



What factors determine how quickly the components of the mixture move through the column? **Answer**

The components of the mixture leave the column after definite intervals of time, known as the retention time. Each component has its own retention time, which can be compared with tables of known retention times to identify unknown compounds. Retention times are always the same, so long as the conditions remain the same. A detector detects changes in the carrier gas as it leaves the column, and a recorder records a peak for each component. Each peak identifies a different component in the mixture being separated.



The gas/liquid chromatogram opposite is of:  
 Ethanol  
 Butanol  
 Methanol and  
 2-Methylbutan-1-ol

Which peak was formed by which alcohol?  
 Which of the compounds is present in the mixture?

Click on the peaks to see if you are right.

**Gabbly Chat**

Topic: [techdis.ac.uk/accessibilityessentials](http://techdis.ac.uk/accessibilityessentials)

**gabber437:** Hello  
**alastair:** Hi Sue

1 gabbers  
 Sue Harrison

Name: Sue Harrison **Change**

Gas/liquid chromatography is used by the police and forensic scientists, to detect small quantities of

Suggest 2 types of compounds that can be identified and quantified by GLC.

**Answer**

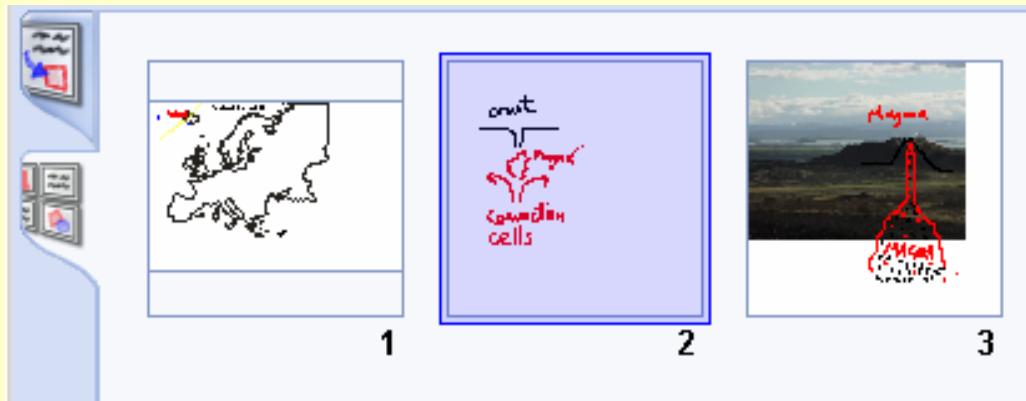
A GLC is often used in conjunction with a mass spectrometer, why?

**Answer**

# 8. Use of an Interactive Whiteboard

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- Benefits
  - Focus on understanding, not writing down
  - Review and consolidate on the fly
  - Capture learner responses



+ hearing; dyslexia; motor - VIP



# 9. Appropriate use of Audio

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Add human voice to Word (Earlylife.doc)

Text to speech (Conebearer.mp3)

PowerPoint action settings with audio clips on different images (Iceland student example plus spare slide!)

PowerPoint action settings with audio clips on the same image (global climate belts)

Camtasia – demo based on molecule image

+ hearing; dyslexia; ESOL; VIP - deaf





# 10. Higher Education Assistive Technology 1

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TechDis funded a series of projects giving lecturers chance to try new technologies or techniques to make their teaching more inclusive

Three projects at this conference:

- O27 Peter Chevins – Parallel Sessions 4
  - Talking Tactile Tablet
- O28 Jo Badge – Parallel Sessions 4
  - Presentation soundtracks and podcasting
- P25 Rebecca McCready – Poster p262 in handbook
  - ScreenRuler magnification software



## 10. Higher Education Assistive Technology 2

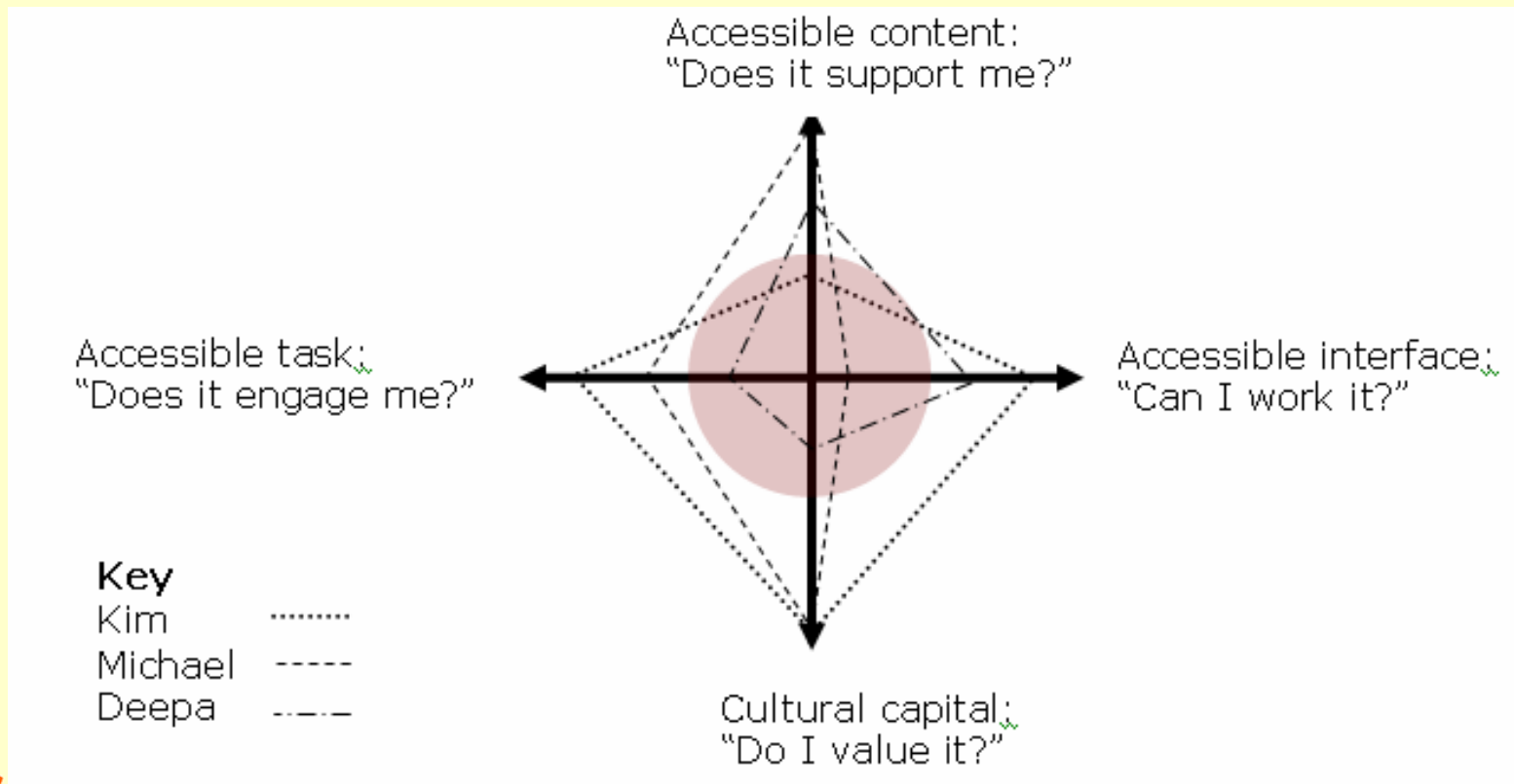
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- Gilhespy – College of St Mark & St John
  - Accessible reusable learning objects
- Gkatzidou, Pearson & Bailey – Teesside Univ.
  - iPod and Creative Zen with mobile Flash & MP3
- Pulman – Bournemouth University
  - Nintendo DS Lite – Brain Training
- Romer – York University
  - Mind mapping for essay and project writing
- **[www.techdis.ac.uk/getheatscheme](http://www.techdis.ac.uk/getheatscheme)**



# 11. Use of Mobile devices

- Accessibility pros and cons



# M-learning samples

Windows Media Center 17:42

sweepNetMovie  
Paused



00:13 100%

Now Playing Menu

Internet Explorer 17:49

file:///My%20Documents\TechDi



This deposition has taken place as the result of changes in the local sediment cells. More [information on Sediment cells](#).

**At this site you need to..**

Tick each task when complete:

- a field sketch of the Little Sea annotating
  - The old cliff line -
  - Fen carr vegetation -

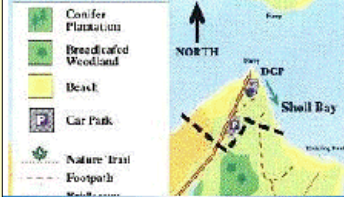
Back Menu

Internet Explorer 17:36

file:///My%20Documents\TechDi

## Studland field course

Click on the map locations or the links below to get more information:




Back Menu

Excel Mobile 17:55

B13		=B11/B12		
	A	B	C	D
1	Diversity index calculation			
2		n = n(n-1)		
3		No' of each species		
4	Daisies	0	0	
5	Speedwell	0	0	
6	Hawksbit	0	0	
7	Forget me	0	0	
8	Clover	0	0	
9	<b>N=Total organism</b>	0	0	=Sum of n(n
10				
11	<b>N(N-1)=</b>	0		
12	<b>Sum of</b>	0		
13	<b>diversity</b>	###		

Ready Sheet1 View Menu

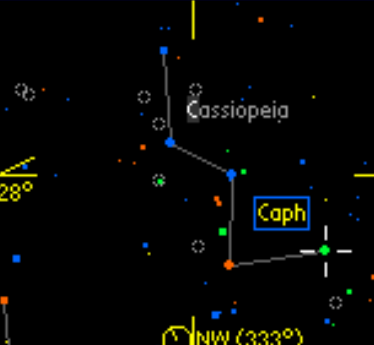
Unit to Unit Converter(1/4)



Temperature Speed  
Length Area  
Mass Density

Exit 1 2 3 4 F

2sky London 20°



Cassiopeia  
Caph

NW (333°)

Astronomy quizz STOP

Which constellation does Betelgeuse belong in?

**Answer**

**Incorrect.**

The correct answer is:  
Orion

OK



## 12. Low cost / no cost AT

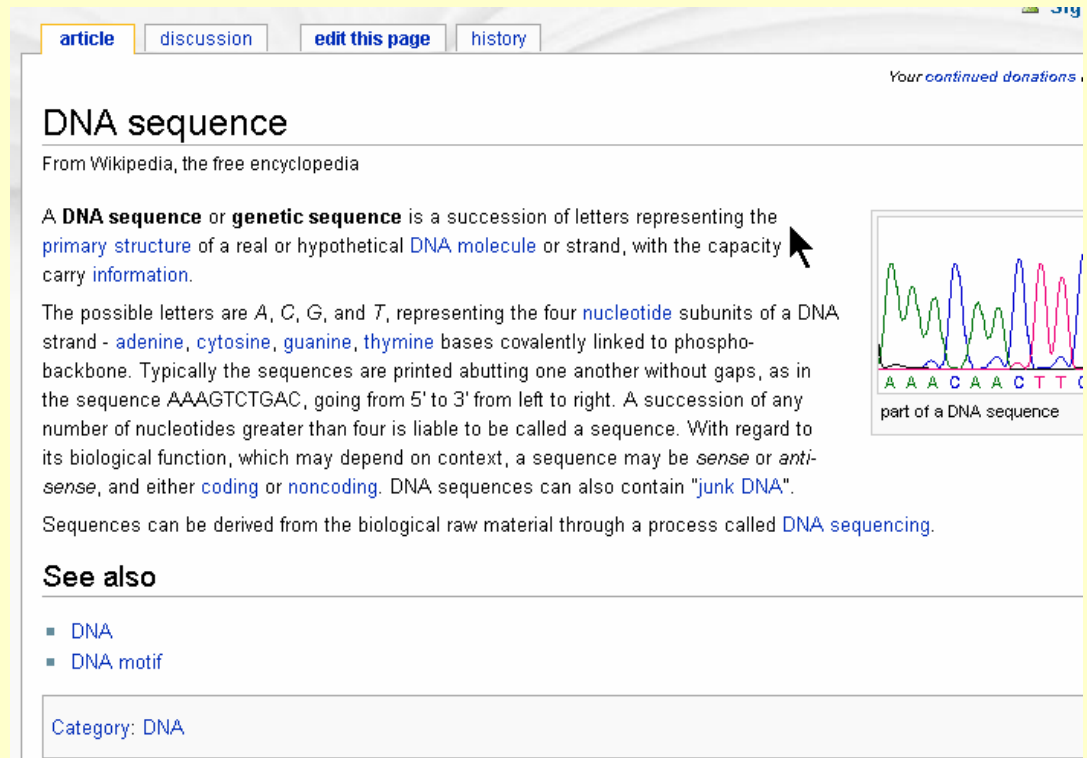
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- Dasher
- Screen tinter LITE
- Freemind
- Let me Type



# 13. Collaboration Tools

- Wikis
- Blogs
- GoogleDocs
- Interwise



The screenshot shows a Wikipedia article titled "DNA sequence". At the top, there are navigation tabs for "article", "discussion", "edit this page", and "history". Below the title, it says "From Wikipedia, the free encyclopedia". The main text defines a DNA sequence as a succession of letters representing the primary structure of a real or hypothetical DNA molecule or strand, with the capacity to carry information. It lists the possible letters as A, C, G, and T, representing the four nucleotide subunits: adenine, cytosine, guanine, and thymine. A mouse cursor is pointing at the word "information" in the first paragraph. To the right of the text is a chromatogram showing a DNA sequence with peaks corresponding to the letters A, A, A, C, A, A, C, T, T, C. Below the chromatogram is the text "part of a DNA sequence". At the bottom of the article, there is a "See also" section with links to "DNA" and "DNA motif", and a "Category: DNA" box.



# Google Docs

Heatwave online demo - Google Docs & Spreadsheets - Mozilla Firefox

File Edit View Go Bookmarks Tools Help del\_jcio.us

http://docs.google.com/Doc?id=dcd8sktd\_1fh8k:k#

Getting Started Latest Headlines

Athens Options You are not logged into Athens

Google Docs & Spreadsheets BETA emma.arnold@gmail.com | Docs Home | Help | Sign out

Heatwave online demo saved on 05 March 2007 10:02 by Emma Save Save & close Discard changes

File Edit Insert Revisions Edit HTML Preview Print Email Collaborate Publish

## Planning for heat wave emergencies in Britain

### Groups at risk

There are certain groups that are particularly at risk during a heat wave. These include:

- \* older people, especially those over 75 years old and/or living on their own, or in a care home;
- \* people suffering from mental ill health, those with dementia, and those who rely on help from other people to manage day-to-day activities;
- \* people who are bed bound;
- \* people taking certain types of medication; and
- \* babies and young children, especially those under four years old.

### Places at risk

Certain types of environment may exacerbate the risk from extreme heat, such as accommodation in top floor flats, lack of air conditioning, or work places producing heat, such as foundries and bakeries. During extremely hot weather, there is a risk of developing heat exhaustion and heatstroke.

### Potential impact

Heatstroke can develop if the symptoms of heat exhaustion are left untreated. It can also occur suddenly and without warning. Heatstroke can result in organ failure, brain damage or death. Climate change means heat waves are likely to become more common in England. By the 2080s, it is predicted that an event similar to that experienced in England in 2003 will happen every year. In Northern France in August 2003, unprecedentedly high day and night time temperatures for a period of two weeks resulted in 15,000 excess deaths. The vast majority of these were among older people. Excess deaths are not just deaths of those who would have died anyway in the next few weeks or months due to illness or old age. The evidence is strong that these summer deaths are indeed 'extra' and the result of heat-related conditions.

### UK response

The arrangements outlined here spell out what needs to be done by health and social care services and other bodies to raise awareness of risks relating to severe hot weather and what preparations both individuals and organisations should make to reduce those risks. The plan also spells out the responsibilities at national and local level for alerting people once a heat wave has been forecast, and advising them what to do during a heat wave.

### Core elements of the UK response:

- \* A 'HeatHealth watch' system operating from 1 June to 15 September, based on Met Office forecasts, which will trigger levels of response from the Department of Health and other bodies.
- \* Advice and information issued by the Department of Health direct to the public and to health and social care professionals, particularly those working with at risk groups, both

No one else is editing this document. [Add collaborators](#) [Check spelling](#)



# 14. Web 2.0

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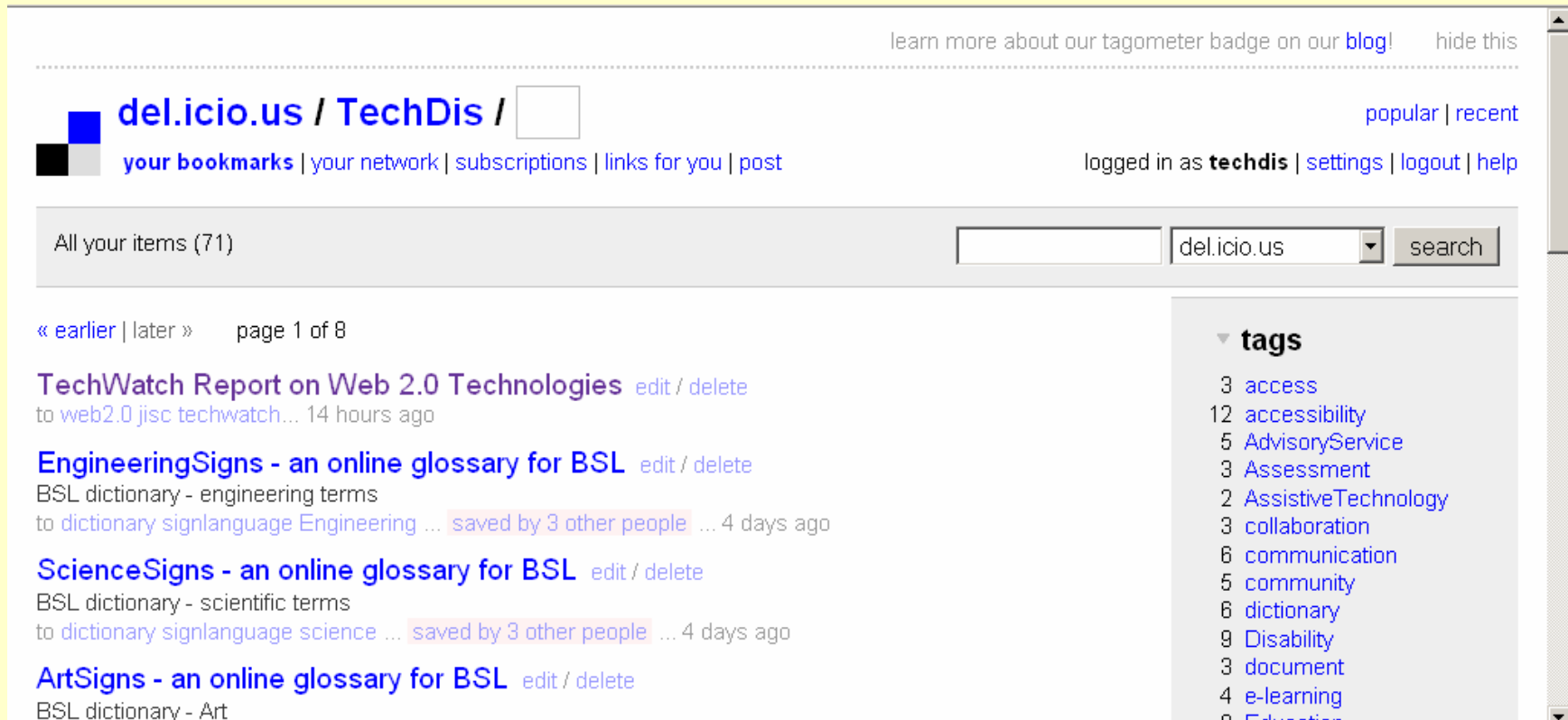
- Online Networking and Collaboration tools
- Clouds – tagging





# Del.icio.us - <http://del.icio.us/techdis>

- Online favourite store for use internally and externally



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BSL dictionary - Art

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- 6 [dictionary](#)
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- 3 [document](#)
- 4 [e-learning](#)
- 0 [Education](#)



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Who can help you hit your students most effectively every time?



# 15. Institutional Staff Roles 1-4

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- **Marketing**
  - Responsible for 'outward face' of university – explicit/implicit messages.
- **Admissions and Induction / Registry**
  - Reflects on entire institution experience.
- **Teaching and Learning / Staff Development**
  - Readiness of staff to understand and adapt to learner needs. Are specific issues being addressed?
- **Library and Learning Resources**
  - Vital in support of truly independent learning. Must integrate with and fully understand teaching needs.



# 15. Institutional Staff Roles 5-8

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- **Technical Teams**
  - Many conflicting technical issues – familiar desktop with preferences stored and elements of personalisation vs mass security and robustness.
- **Learner Support Staff**
  - Crucial to draw together different players in a student's education and ensure all are working in the same direction to support the learner needs
- **Pastoral Care Systems**
  - Balance between disclosure of need (to one = to institution) and confidentiality / data protection. Clear top down guidance essential.
- **Examinations and Assessment**
  - Many different players all needing to understand complex issues. External guidance needed.



# 16. External Support

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TechDis (also Internal Support – Technology Change for Inclusion Project),  
Academy and Subject Network,  
Netskills,  
ALT/CMALT,  
AbilityNet,  
SEDA.



# Contact Details

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[www.techdis.ac.uk](http://www.techdis.ac.uk)

