Computer anxiety and what we can do about it

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What is computer anxiety?

“When a person feels uncomfortable or anxious when using or being expected to interact with a computer.”
(Howard 1986)

For today’s students this means when they have to interact with software or technology which is not of their choosing
The anxious person may...

- Have some negative thoughts
- Have sweaty hands
- Have an increased heart rate
- Want to avoid working with a computer at all
Everyone else can do this – I can’t ask for help
I can do this quicker on paper
I don’t why I am doing this....
I don’t know how to....

I am stupid when it comes to computers
I will break it
I can never do computers
Computers hate me
Three types of thought

• How do I make it work and what am I supposed to be doing? – operational anxiety – the easiest one to solve

• I’m a girl/ non geek/ boy/ man I can’t do that! – sociological anxiety – addressed by sharing the ‘big’ picture and confronting stereotypes

• It is too scary for me... psychological anxiety – too deep rooted to solve but can sometimes be partially mitigated
Contrasted with the thoughts of someone who does not have computer anxiety
I wonder what happens when...
I love finding out about new applications
An error message – what can I learn from it?

This is a bit like the last application that I learnt.
I think I’m getting this... it’s not going to beat me!

I wonder what I can use this for...
Positive thoughts

• Sees errors as a challenge to be beaten
• Enjoys learning new tricks
• Positive view of the interaction
What might be contributory factors?

• Context
• History
• Personality

(Howard 1986:102, Anthony et al 2000, Rahimi & Yadollahi 2011)
Context

• The physical environment
• The culture
• The reason for the interaction
• The nature of the interaction
History

• First experience (Cowan & Jack 2011)
• Subsequent experiences (Korobili et al 2010, Mcilroy et al 2001, Teo 2008)
• Education (Elkins 1985)
Who has computer anxiety?

There! Ready for a new term. The students are so good with technology these days. Lucky I took those courses over the summer.
How is it measured?

- Using Weil, Sears and Rosen’s Computer Anxiety Rating Scale (CARS) and Heinessman’s CARS
- 20/19 questions with 5 point Likert scale responses – some of which are negatively scored.
- The total score indicates the level of computer anxiety
The sample groups

Business School Students

Computer Science School Students
What were their levels of computer anxiety?

Distribution of computer anxiety for experiment 3

- Low: 4%
- Medium: 21%
- High: 75%

Distribution of computer anxiety levels for the PG group in experiment 2

- Low: 75%
- Medium: 20%
- High: 5%

Distribution of computer anxiety among first year business students 2015

- Low: 55%
- Medium: 42%
- High: 3%

Business School Students
What were their levels of Computer Anxiety

Computing Science School Students
Implications

Avoidance
- Reduced research
- Reduced editing

Stress
- Increasing levels
- Health impacts

Under achievement
- Lack of engagement
- Student drop out
How can they be helped?

• Low anxiety – deal with the cause
  – Training
  – Peer support
  – Presentation of learning materials in a range of media
How can they be helped

- Medium anxiety – deal with the current issue
  - One to one coaching sessions
  - Clarity of purpose
  - Positive reinforcement
How can they be helped

• High level of computer anxiety – support
  – Anxiety management techniques
  – Professional support
  – Talking therapies
In Summary

• Do not assume everyone in your class is comfortable using the technology that you present
• Attempt to address medium to low anxiety by presenting learning materials in a range of media and allowing a range of devices – include peer support as a norm
• Talk to individual students whose work is at odds with their oral participation