

# The Psychological Effects of Poor Number Sense Processing in Adolescence

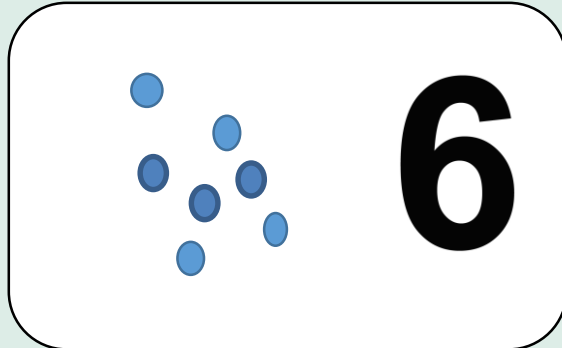
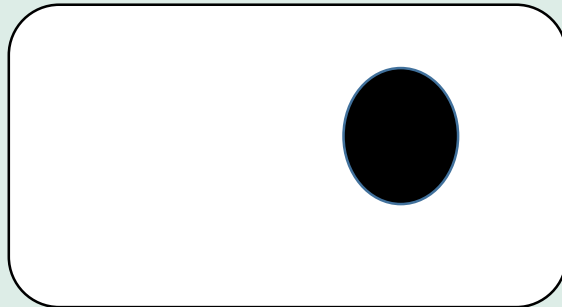
Eleanor Willard  
Leeds Beckett University



## The aims for this section of the research

- To examine the psychological effects on secondary school students presenting with dyscalculia
- To compare these perspectives with students who also have problems with mathematics, but for different reasons
- To compare these perspectives with students who are mathematics competent

# The procedure 1 : Screening



How many spots are there?

Does this match the number?

Which number is more than the other number?

Is this sum correct?

$$8 + 3 = 11$$

$$3 \times 2 = 8$$

N = 375  
(22 identified as presenting dyscalculia)

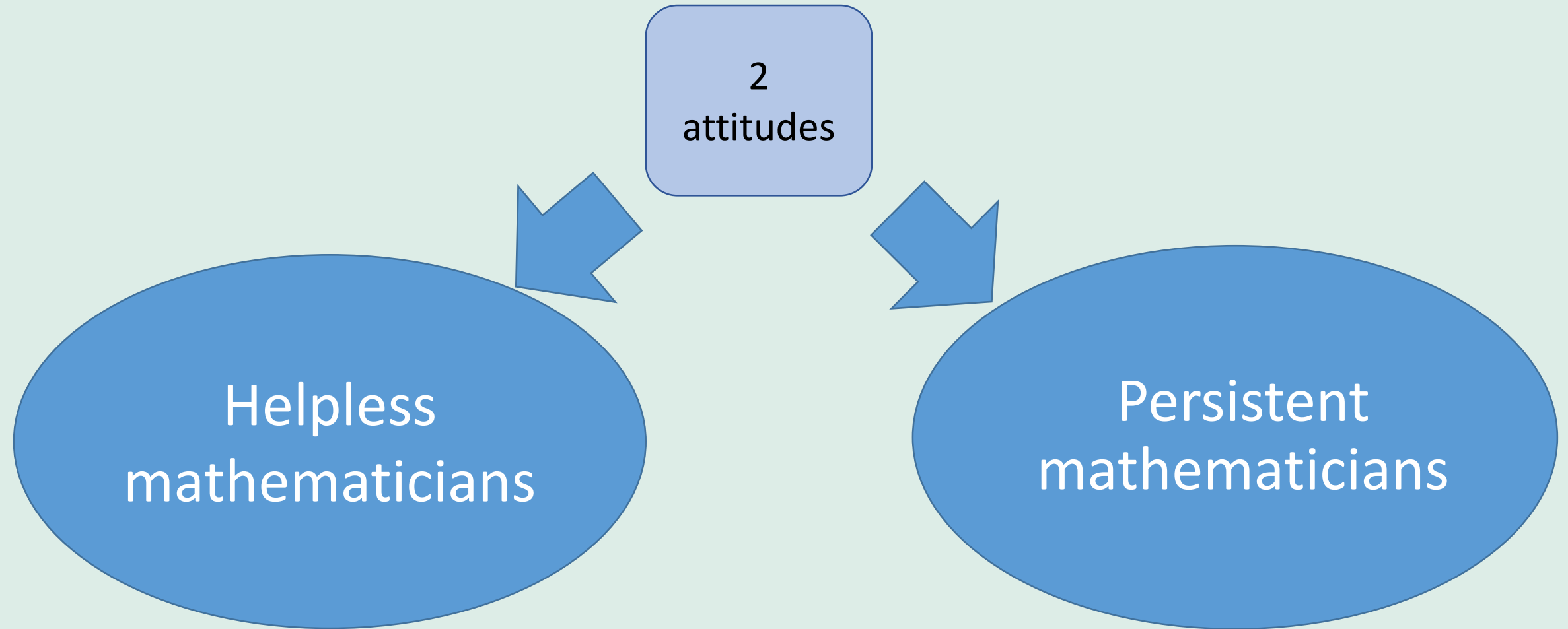
# The procedure 2: Measuring the psychological effects

33 item Q sort

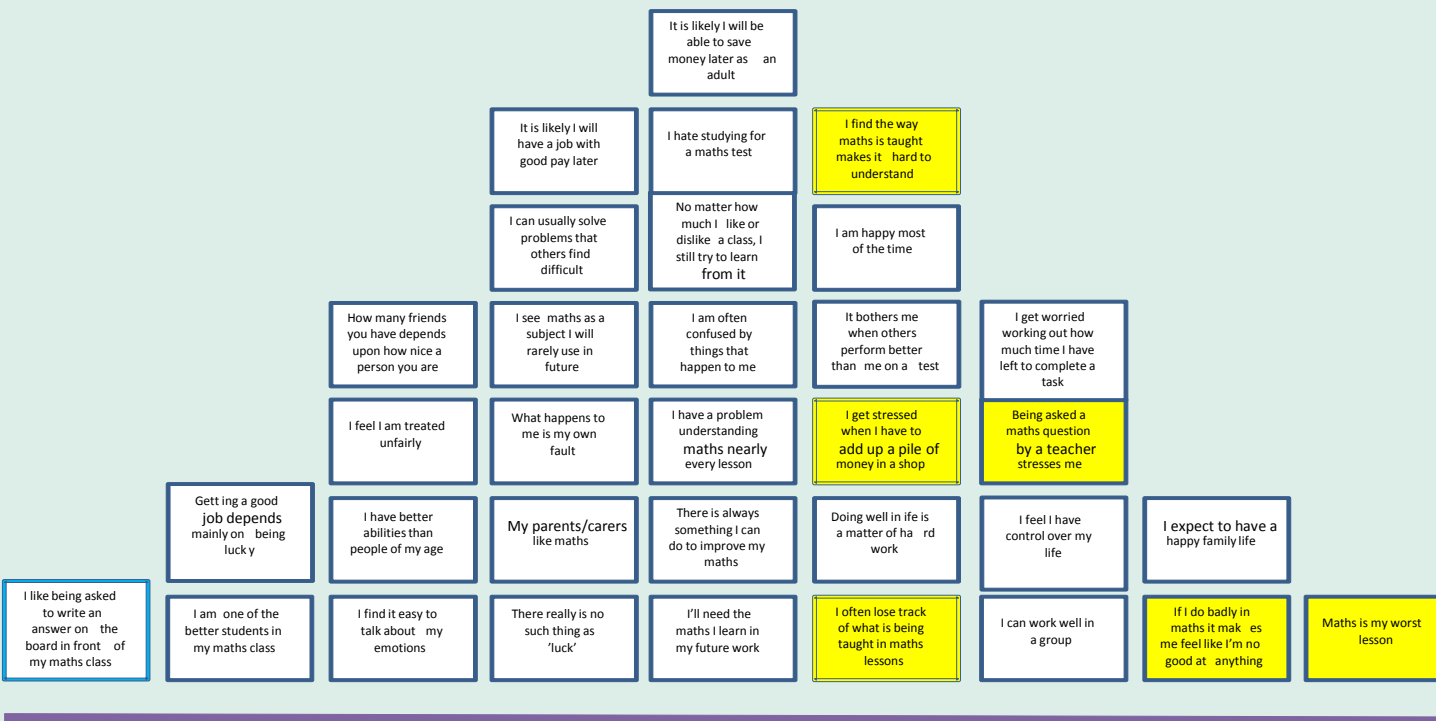


N = 34

# Dyscalculia Factors



# Factor 1: Helpless mathematicians

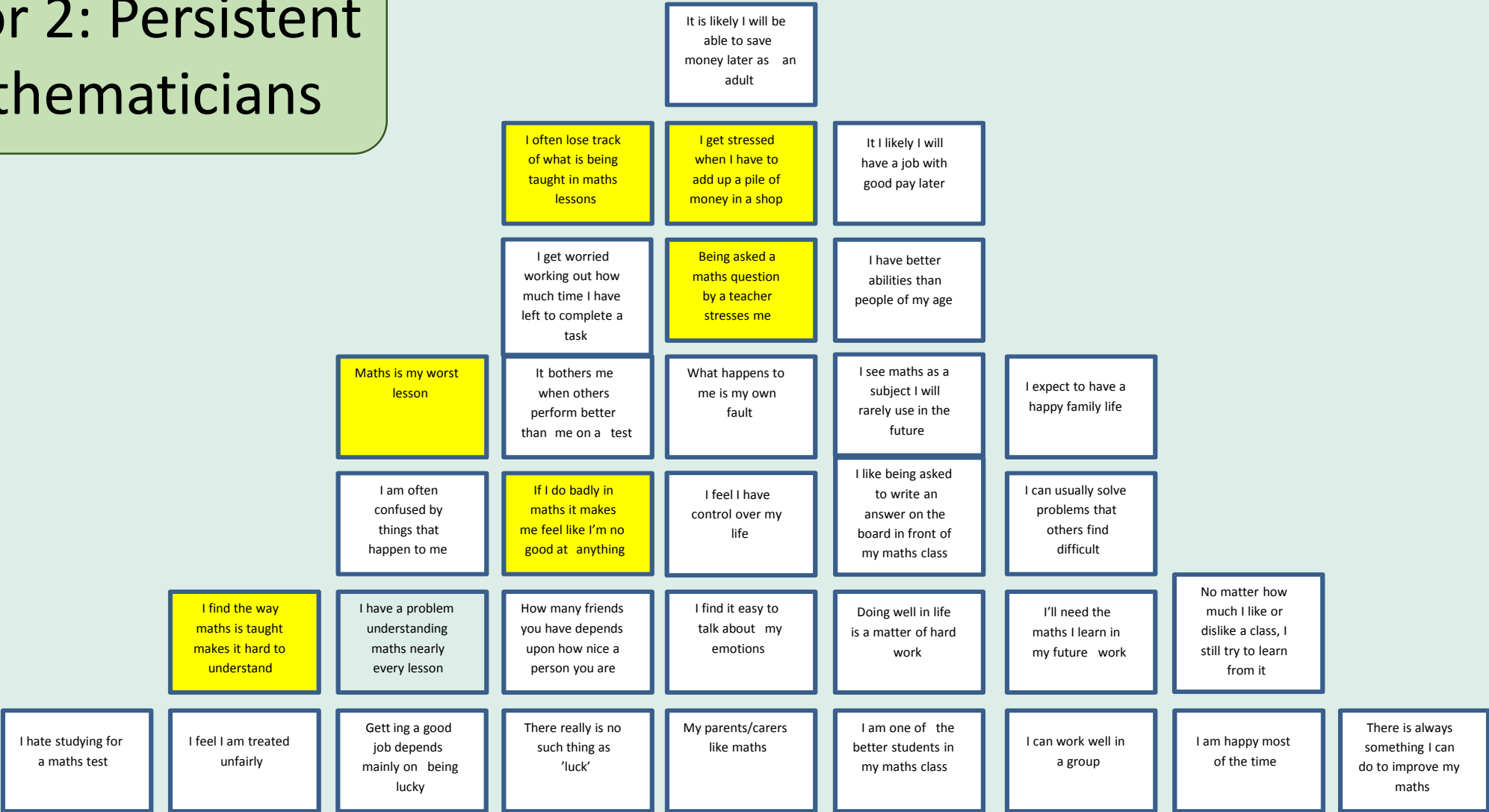


- Maths is my worst lesson
- If I do badly in maths it makes me feel like I'm no good at anything
- Being asked a maths question by a teachers stresses me
- I often lose track of what is being taught in maths
- I get stressed when I have to add up a pile of money in a shop
- I find the way maths is taught makes it hard to understand

Disagree

Agree

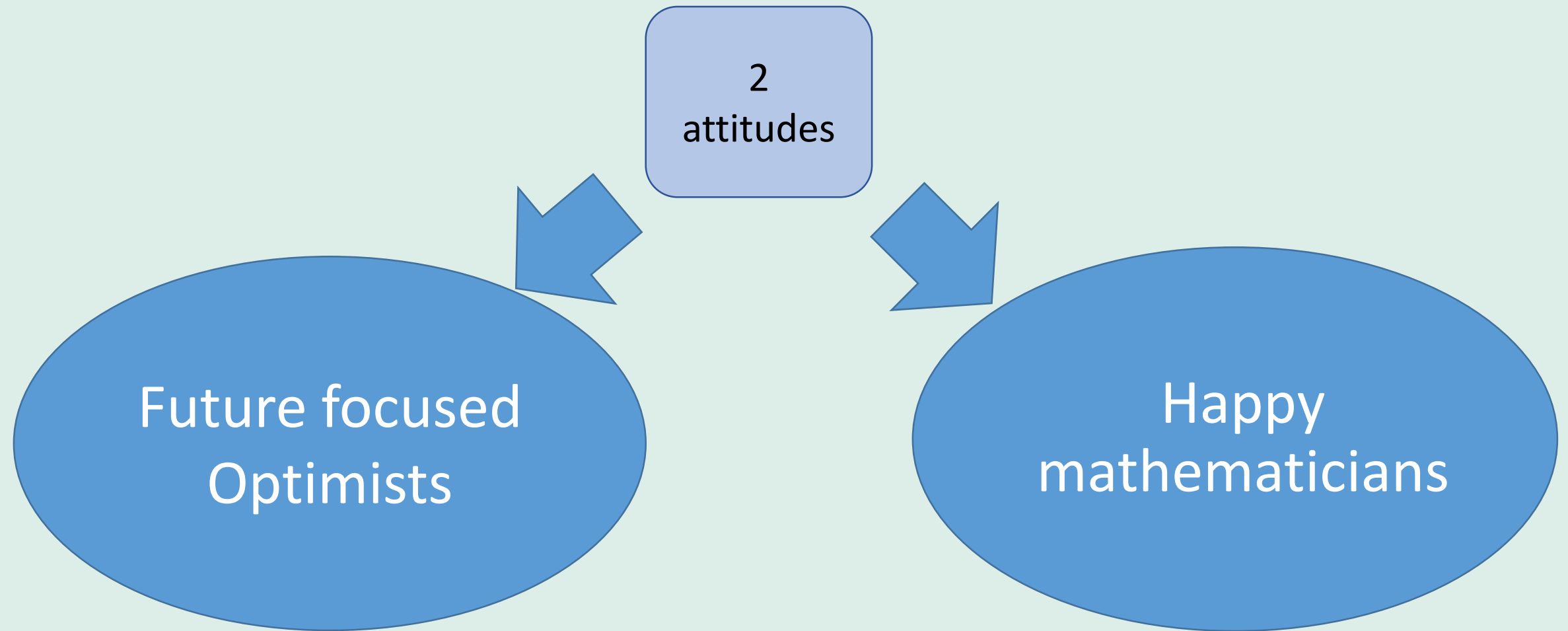
# Factor 2: Persistent mathematicians



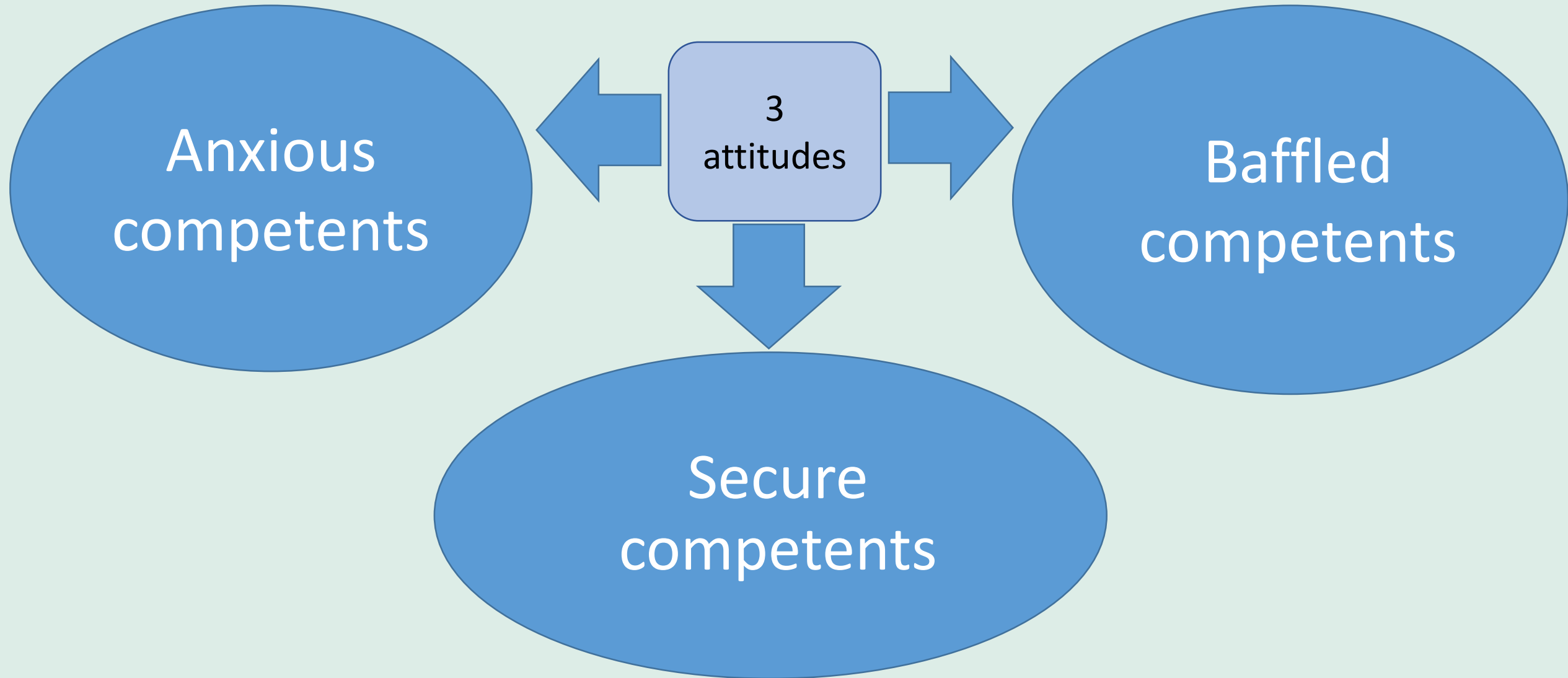
	Helpless mathematicians	Persistent mathematicians
<b>I hate studying for a maths test</b>	<b>0</b> (neutral)	<b>-4</b> (strongly disagree)
<b>No matter how much I like or dislike a class, I still try to learn from it</b>	<b>0</b> (neutral)	<b>3</b> (strongly agree)
<b>I am one of the better students in my maths class</b>	<b>-3</b> (strongly disagree)	<b>1</b> (agree)
<b>I like being asked to write an answer on the board in front of my maths class</b>	<b>-4</b> (strongly disagree)	<b>1</b> (agree)



# Low achievers / Non Dyscalculia



# Competent Mathematicians



Group	Factor	Strongly agree	Strongly disagree
Low achievers	Future-focused optimists	I'll need the maths I learn in my future work	I see maths as a subject I will rarely use in the future
Low achievers	Happy mathematicians	I expect to have a happy family life	It bothers me when others perform better than me on a test
Mathematics competent	Secure competents	There is always something I can do to improve my maths	I feel I am treated unfairly
Mathematics competent	Anxious competents	It bothers me when others perform better than me on a test	I'll need the maths I learn in my later work
Mathematics competent	Baffled competents	I feel I am treated unfairly	What happens to me is my own fault

Key themes arising from the sorts and the comparison...

Mind set

Optimism

Ability level in  
set

Salience

Resilience

Any Questions?

E.Willard@leedsbeckett.ac.uk