

Don't forget your  
feelings

Exploring adults'  
motivation to learn  
mathematics

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# Motivation

Education is not the filling of a pail, but the lighting of a fire.

William Butler Yeats

# Research Sample characteristics

- Trade union members
- Sample size 20- 8 women, 12 men
- 6 BME, 14 White UK
- Geographically spread
- TUC, unionlearn, USDAW, UNITE, POA, NIACE

# Methodology and methods

Grounded theory- focusing on the words of the adult learners to develop theory

Interpretist, feminist, critical

Gatekeepers

*moderatum* generalisations - Payne and Williams (2005)

# 1. Why did you decide to start learning maths?

*... anything I can do to show my employer I am trying to better myself and bring myself up to modern standards... .. a positive thing.... (M, 28)*

*It does strengthen your arguments during negotiations.....( F,40)*

*I don't want get left behind either...bragging rights... I purely did it for myself ... (M,40)*

# 1. Why did you decide to start learning maths?

... I was **co-opted** into being the Health and Safety rep, they knew I had the ‘wherewithal’ to stand up to management, ..... **‘You needed something to get your teeth into**

(Female, 53)

## 2. How do you prefer to learn maths at work?



*... The teachers have moved on such a lot from the archaic way they used to have, more relaxed plus the classes are smaller ... .. (M, 48)*

*‘That’s where **the difference** is, you are **doing it with people you trust** because you work with them, they are your work colleagues and they are friends’ (F,47)*

# How do adults prefer to learn maths at work?



- **‘different’**
- **more collaborative**
- **smaller classes**
- **relaxed atmosphere** where they felt they could **talk openly**
- **relevant, - practical applications or -everyday life** or linked to **trade union issues e.g. Health and Safety**



### 3. Is there any relationship between learning maths at work and union membership?

\* ... If I am honest, part of it is because **[the new ULR] was organizing it**. He put a lot of effort in, he was getting a lot of stick from people on the shop floor, saying 'You're wasting your time' and I said '**If you get maths going I'll put my name down and I will do it ...**

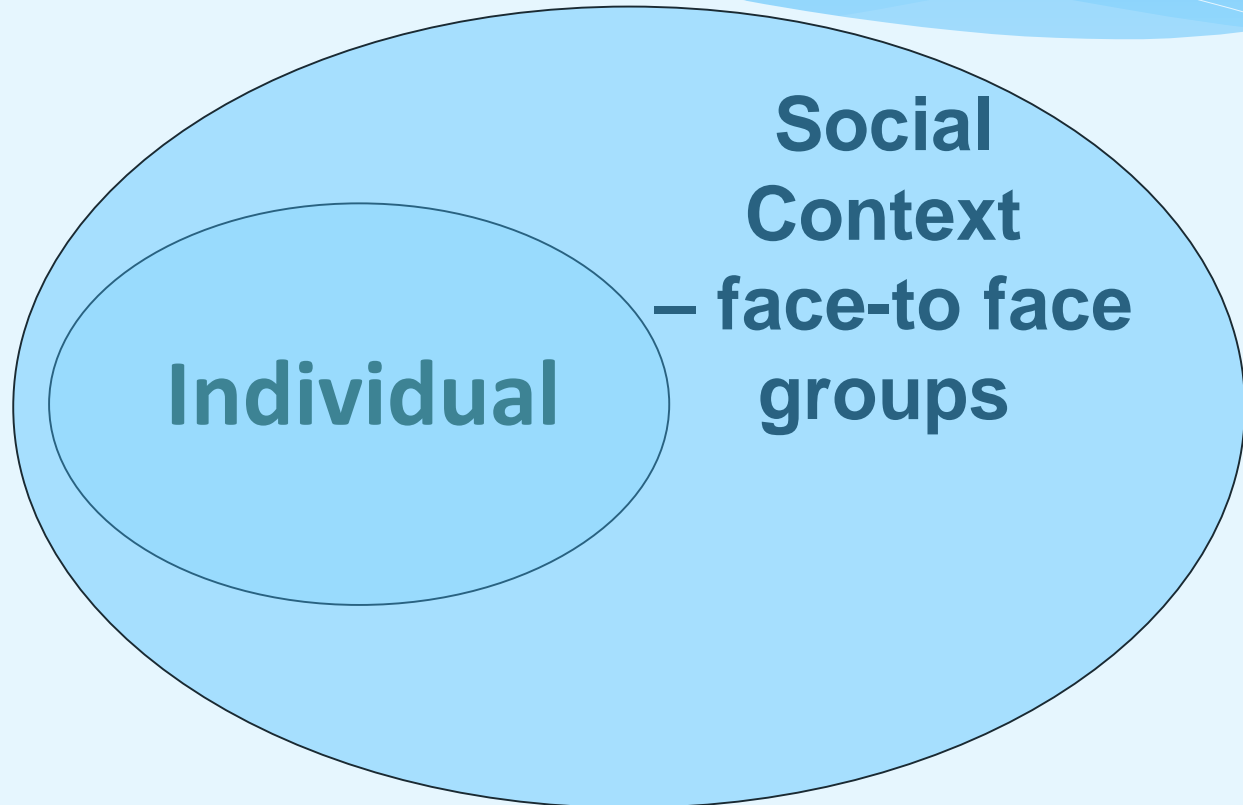
(Male, 49)

\* ... I want to know if the figures management give to me are accurate. I want to use them for evidence for an issue, such as illnesses, noise levels. **You are making the figures work for you ..**

(woman , 40)

# Framework of analysis

**Socio-cultural context**



# Motivation and Confidence

***So many opportunities have opened up to me since I did my numeracy, built up my confidence***

....

***(F,35)***

***'Developing confidence is allowing you to talk about it' (maths)*** ***(M,28)***

***'Gave me the confidence to think well, if I learned that I can learn this'*** ***(M, 51)***

12 out of 20 sources used the word confidence to describe a change in how they felt without a prompt

Successfully developing mathematical skills develops the adults confidence

helps to shape their identities

influences motivations

both

inside and outside

the classroom.



Logo :

[http://en.wikipedia.org/wiki/European\\_Trade\\_Union\\_Confederation](http://en.wikipedia.org/wiki/European_Trade_Union_Confederation)



**Initial motivation** to re-engage with learning related to individual needs and goals such as:

- improving job security
- filling perceived personal knowledge or skills gap,
- helping their children
- gaining public recognition of their knowledge or skills through certification.

# Successful learning develops *confidence* both inside and outside the classroom

- \* when negotiating on behalf of fellow trade union members
- \* with their finances, enabling them to better support their families
- \* becoming teachers of mathematics
- \* supporting the integration of newly arrived children into the UK education system.

# Continuing motivation

Illeris (2014) also claim that **‘transformative learning’** can bring about a change in identity –

Barbalet’s (1996) definition of confidence as **‘a feeling which encourages one to go one’s own way’** or **‘an emotion of self-projection’** or even **‘the emotion associated with a willingness to act, or self-confidence’**

# Motivation and Emotions

Motivation is *‘a potential to direct behaviour that is built into the system that **controls emotion**. This potential may be manifested in **cognition, emotion and / or behavior**’*

(Hannula M. , 2004)



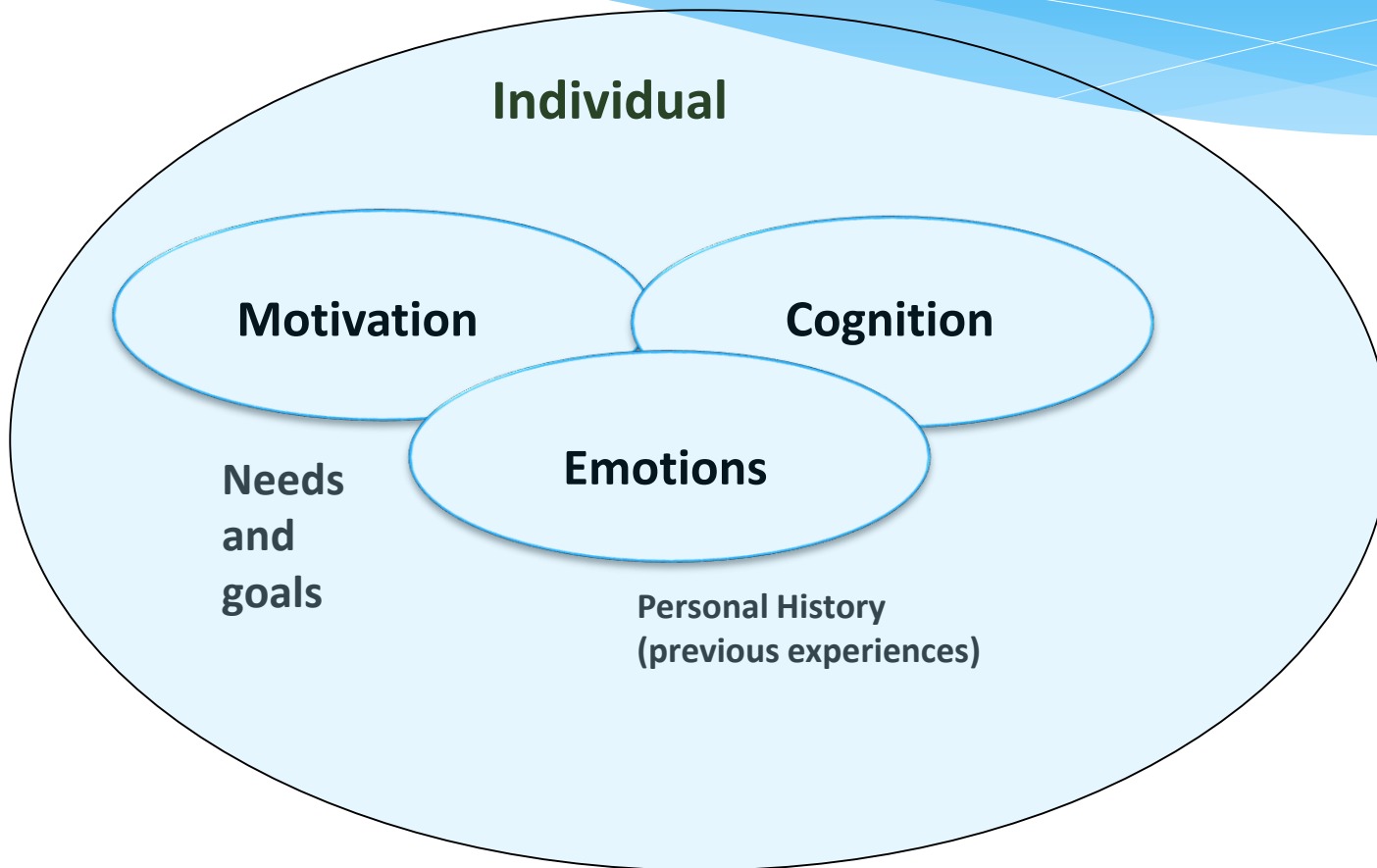
# Looking at the learner's language

- \* Adults used emotional language
- \* 8 of the 20 used negative words , taboo, phobia, ‘a block, a barrier and a massive fear’.. ‘I would come out in a cold sweat” ( Female , 50)
- \* Most (18 out of 20 respondents) spoke **positively** about mathematics during the interviews.
- \* 12 out of 20 used the word ‘**confidence**’ in relation to their motivation and intentions to act differently in the future.

# Affective Mathematical Journey

- \* Doing maths is a confidence booster... getting rid of the stigma. People are frightened... they say I'm no good at fractions". M(61)
- \* "... for instance, when I learnt to do percentages you sort of sit up a bit straighter. M(49)

# The domain of Affect



# Motivation Theories

## Psychological theories - Self Concept

- For education these include:

one's past experiences and associated feelings (Weiner, 1972)

Fixed traits and growth states (Dweck, 2008)

Fixed and growth Mind-set- (Boaler, 2016)

# Affect and learning Mathematics

Building on notions of :

- \* An Affective pathways -Debellis and Goldin (2006) –changing emotions when problem solving
- \* Emotionally safe environments ‘students feel no danger of embarrassment, humiliation, or loss of dignity and respect’.  
Schorr & Goldin,2008, p.134)



# An Affective Mathematical Journey

Jean (46) was

- ...“severely dyslexic”
- “...so I was a ‘thicko’ a troublemaker” ....
- “It’s like my worst fear ...maths is the black hole to me.”
- ... she said learning ... ‘was daunting and I
- really did struggle.’

# Affective Mathematical Journey

Jean (46) was

- but was ‘egged on by her colleagues’ ...
- she developed more ‘confidence’ because she knows her colleagues, her husband and her tutor will support her.
- **She is now ‘passionate about maths’ and encourages others to learn.**

# Motivation

A change in behaviour as a function of

- an individual's motivation, emotions and cognition
- which develops and is developed, by social face-to-face groups
- acting within a wider social context

(Kelly, 2017)